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SOME EXPERIMENTS ON BEHALF OF THE UNEMPLOYED.

THE French Dictionary of Political Economy, published some thirty-five years ago, devotes fourteen closely printed pages to the *droit au travail*. So much space was doubtless given to the subject because the writer belonged to a generation that had seen Louis Blanc half succeed in establishing his National Workshops; because several of the constitutions of France had recognized the "right" in its most sweeping form; and because many of the French Socialists held it as one of their cardinal doctrines that the poor man's right to labor is the counterpart of the rich man's right to property, the one being baseless unless the other is recognized. But the fourteen pages of controversial writing no longer interest us. The author is beating the thrice threshed straw of "natural" rights, and what has since been said on the general subject by Leslie, or Maine, or Morley, or Huxley, destroys

the force of many of the arguments he urges as well as of those he controverts.

Yet we may not wholly dismiss the problem of the unemployed, when we refuse to consider it as a question of abstract right. To the minds of the discontented classes industrial society, as it exists at present, seems little better than an organized paradox: on the one hand, we have unexhausted natural resources and unsatisfied desires, and, on the other hand, we have the great army of the unemployed. Popular estimates place the number of the unemployed in England and Wales at upwards of six millions, and in the United States at more than one million. The charity organization societies of this country report that from forty to fifty per cent. of all applicants for assistance "need work rather than relief." * This ever present condition has had more influence than any theory in bringing about attempts to furnish work to the unemployed. "The English Poor Law is based primarily on an act for 'setting the poor to work,' and authorizing the collection of rates for that purpose." From the time of Elizabeth to the present there have continued to be frequent estimates of the aggregate loss to industry through enforced idleness, and frequent proposals for setting the poor to work. It is with certain experiments in this direction that the present paper is concerned.

"Charity work" is the ambiguous term used to designate such employment as is given, not primarily for the purpose of securing a useful product, but as a means of aiding the unemployed. In such cases, the pay is not given for the sake of the work, but the work for the sake of the pay. The offer of work, instead of proceeding from the motive of self-interest, as in ordinary industrial transactions, is the result of self-sacrifice on the part of the one

* This conclusion was reached after a study of nearly 28,000 individual cases in all parts of the country. The proportion of out-of-work cases was somewhat larger in the Eastern cities than elsewhere. See Mr. Charles D. Kellogg's Report to the National Conference of Charities and Correction, 1887.

who makes it. Since motives of self-interest have not prevented the extrusion of a large mass of potential labor from the industrial organism, it is interesting to learn what public and private benevolence has been able to do in the way of utilizing the waste product.

Experiments in the charitable provision of work for the unemployed may be roughly grouped in three classes: (I.) those of which the primary object is the temporary relief of the destitute; (II.) those of which the primary object is education,—"the training of the incompetent population of the laboring class into competency," with a view to their final return to the labor market; and (III.) those undertakings of which the object is the permanent support, in isolated colonies or working homes, of such persons as have found it impossible to maintain a position in the competitive industries of the time.

(I.) Most of the English and American experiments in giving charity work are of the first-mentioned kind. Temporary relief being necessary, work is provided as a deterrent influence, as a test of worthiness, and as tending to preserve the self-respect and independence of the recipients. Incidentally, some useful product may be obtained. Thus in Washington, in the winter of 1877–78, there was much destitution; and relief was given in the form of work, with wages at fifty cents per day. About five thousand dollars were thus paid out, the men being employed to reduce certain streets to grade, and to fill up an abandoned canal south of the Capitol.

As already mentioned, the English Poor Law began with an attempt to give relief in the guise of work. This attempt narrowed down, long ago, to the mere imposition of taskwork in the workhouse or elsewhere. Such labor does nothing to preserve the self-respect of the recipient of relief, and is useful only as making the lot of the pauper less easy than that of his self-supporting neighbor.

From unproductive taskwork of this sort there are all gradations, up to the point where the cheapness of the pauper labor makes it available for ordinary employers. Some of the English vestries have utilized the work of those who must otherwise have been dependent to such good purpose that the element of charity was present only in appearance. Paving and other work was done as cheaply as it would have been by the regular contractors. The labor was unskilled, but it was compensatingly cheap.

In the United States, the commonest mode of giving relief in the form of work is found in the Provident Wood-yards. These are sometimes operated in connection with Friendly Inns, all relief being in the form of meals and lodgings given in return for work. In other places small daily wages are paid. A provident wood-yard was established in Boston in 1876, through the influence of Mr. George Abbot Ames. This institution co-operated with the Boston Provident Association, and afforded an admirable work-test. For many years it was more than self-supporting; but, after change of management and location, it became involved, and has since suspended. At the wood-yard operated by the Boston Overseers of the Poor, wages are paid either in meals and lodgings or in relief given by the overseers. The lodging-house was started to relieve the police stations of their nightly swarm of lodgers; and the work-test is valuable to the overseers in distributing outdoor relief. At times the workers are so numerous that they cannot all be profitably employed, and some are kept busy cording up wood which others are set to pull down. The sale of wood pays about fifty per cent. of the expenses. The well-managed wood-yards and lodging-houses under the care of the Philadelphia Society for Organizing Charity earn from sixty-two to seventy-five per cent. of their expenses. The Friendly Inn and Provident Wood-yard of Baltimore is far from self-supporting, partly because work enough is not provided to

keep all the applicants busy, and some relief is consequently given gratis. Wood-yards reported to be self-supporting are connected with the Roxbury Charitable Society of Boston (but the accounts of the yard are here inextricably involved with those of relief proper), the Brooklyn Bureau of Charities, and the Organized Charities Association of New Haven. While the Charity Organization Society of Chicago was in existence, its wood-yard was a source of revenue.

"If it can be shown that, under existing industrial conditions, the shiftless and unskilled class, which makes up the bulk of the floating pauperism of our great cities, can be made self-supporting, we shall have gone far towards the solution of the hard problem of vagrancy."* But this as yet has certainly not been shown. The managers of the wood-yards uniformly complain that they cannot dispose of enough of the product to employ all the men profitably. The competition of steam-driven machinery is severe. In other words, charity has not yet found a way to utilize surely the waste labor power of the floating population. The differences in results reached at various places seem to depend slightly upon differences of condition, but mainly upon different degrees of business ability in the managers. Where the wood-yards have been self-sustaining, it has been because some one has donated a considerable amount of executive ability, and this gift has made up for the disadvantage of hand-saws and inefficient workmen. Nothing is found to defeat such an enterprise more certainly than to hire a semi-pauper to superintend it.

But these enterprises, while not specially successful as industrial undertakings, are eminently so as relieving agencies. First, the work-test keeps away a great number of applicants; and the distant prospect of it prevents a

* *Seventh Annual Report of the Philadelphia Society for Organizing Charity*, 1885, p. 15.

considerable number, hovering on the brink of pauperism, from qualifying for the receipt of alms. In the second place, the opportunity to work does in a measure preserve the independence and self-respect of those who receive aid. While it may be true that "it is impossible to dissociate the taint of charity from relief [in the form of] work";* yet the "taint," of what might better be called almsgiving than charity, is not so dark as in relief without work. In the third place, if the management is at all good, the product of the work somewhat lessens the cost of relieving the destitute.

(II.) It is in Germany that we find the most systematic experiments in charity work of which the object is to educate the worker into competency for regular self-sustaining existence. While some very useful undertakings of this sort have been carried on in England and the United States, they can be better understood after a careful examination of the German Laborers' Colonies and the institutions allied with them.

During the early years of the last decade, the number of beggars and vagabonds in Germany seemed to be steadily increasing. The total number of such persons roaming about the land was variously estimated at from 40,000 to 200,000; and the very diversity of the estimates, in a land of careful statisticians and efficient police, shows how completely the authorities had failed to meet the evil or even accurately to measure it. Indiscriminate giving on the part of individuals was very general, the excuse for it being that there was no other way to keep men from starving. Von Bodelschwingh, a Protestant minister interested in the management of an institution for the care of epileptics, began to make experiments at this institution

* A. Dunn Gardner, in the *London Charity Organization Review*, vol. iv. p. 260. The writers for this *Review* are, for the most part, "orthodox" economists, who accept the wages-fund theory, and at the same time are active workers in practical charities.

in the direction of giving relief only in return for work done. As long as this rule could be followed, it was found that the number of applicants decreased, while their character improved.

On certain waste but redeemable land, situated not far from the highway between Berlin and Cologne, and about ten miles from the manufacturing town of Bielefeld, Pastor von Bodelschwingh secured the establishment of the first Laborers' Colony, Wilhelmsdorf, which was opened in March, 1882. The primary object of the colony was announced to be "to employ at agricultural or other labor, until such time as regular positions could be found for them, all men, of whatever religion or rank, who were able and willing to work." The second object was to deprive all vagabonds who would not work (*arbeitsscheue Vagabunden*) of their stock excuse for begging,—the claim, that is, that they could find no work.

Twenty-one colonies organized in a similar way and for similar purposes are now in existence, with possible accommodations for nearly twenty-five hundred laborers. The first table in the appendix gives a list of the colonies; the date of opening of each; the number of men received and dismissed since the opening and during the year 1889; the number each colony can possibly accommodate; a classification of those admitted during 1889 according to age, religion, and marital state; and a classification of those who left during the year according to the reasons for departure. Besides these, two industrial homes for the temporary support of women are spoken of as *weibliche Arbeiterkolonien*. The prospective establishment of similar institutions in Russia and Belgium is also announced. The expenses of maintaining the colonies are usually met by voluntary contributions from private persons; but public subventions, oftenest in the form of a non-interest bearing loan, are not infrequent. The influence of the Church both in raising the funds and in the

management of the colonies is very marked. They are all of Protestant origin, except Elkenroth and Maria-Veen, which are conducted by the Catholics. Only one, in Berlin, is in a town. It is a cardinal point in the rules of the institutions that no one is admitted as a matter of right. They are established from "free compassion"; and it is held that neither the Church nor the State should be organically connected with their management. Men are admitted without regard to their moral deserts or past record; and the only consideration paid to the matter of an applicant's previous residence is that, in case all cannot be accommodated, men from the neighborhood have the preference. The table indicates the reasons for which men are dismissed.

The commonest occupations in the colonies are ordinary farm labor, the reclamation of sand wastes, moorland, or rocky fields, forest culture, and such trades as are necessary to supply the wants of the colonists. As the pressure for admission is much stronger in the winter than in the summer, it is necessary to have land that can be worked all the year round, or other work at which the men can be employed.* Straw plaiting, broom-making, and other trades have been sometimes introduced. The colony at Berlin is simply a great workshop. The labor exacted varies in severity in the different colonies; but it seems to be severe in all of them. The service rendered is said to be efficient, especially in digging and other heavy work.

* For the months of 1889, the number of inmates and of available places was as follows: —

	Available Places.	*No. of Inmates at Close of Each Month.*
January, 1889,	2,330	2,296
February, "	2,343	2,272
March, "	2,355	1,758
April, "	2,770	1,292
May, "	2,385	1,264
June, "	2,410	1,223
July, "	2,455	1,172
August, "	2,473	1,273
September, "	2,473	1,323
October, "	2,475	1,802
November, "	2,502	2,354
December, "	2,477	2,515

See *Die Arbeiter-Kolonie*, Jahrgang VI.

The first fourteen days after his admission, the colonist works for his board and lodgings. After that, small daily wages is placed to his credit, from which payment for clothing and other articles furnished is deducted. The pay varies with the different colonies, the season of the year, the efficiency of the man, and the length of time he remains at the colony. The amount given for work is kept considerably below the amount paid for similar service in the neighborhood. It varies from fifteen to fifty pfennige per day. Many of the men have a little sum to their credit on leaving the colony, usually not more than one to five marks, but sometimes reaching as much as fifty. The relation of length of residence in the colony to amount of savings is shown in Table II. in the Appendix.

The gross expenditure for land and improvements by the twenty-one colonies has been 2,158,273 marks, without allowing for some defective returns. The number of available places at the end of 1889 was a little less than 2,500, making the permanent investment for each place about 863 marks. The average annual net cost for each colonist ranges in the different colonies from fifty to one hundred and twenty-seven marks.*

A system of *Naturalverpflegungsstationen* is operated in connection with the colonies, and forms an essential part of the whole system for aiding the unemployed. These stations will be better described to an English reader by calling them stations for the relief of wanderers than by a literal translation of their German name ("stations for relief in kind"). They correspond in part to the friendly inns of this country and to the wayfarers' lodging-houses of England. Their object is to give, in return for work, relief in kind, food and lodging, to homeless applicants. In connection with the larger ones are bath-rooms, arrangements for disinfecting clothing and for the destruction of vermin, and other appliances necessary to the decent care of the lodgers. The work provided is usually

* *Arbeiter-Kolonie*, Jahrgang VI. p 9.

wood-cutting or stone-breaking. It is held to be essential that the relief given should be adequate in quality and quantity to keep a man in good physical condition for hard work and for travelling; and it is hoped to have such a network of these stations over the country that a penniless man seeking work can travel from one end of the empire to another without needing to beg.

Contrary to the practice in the case of the colonies, these stations are generally supported by public funds obtained from the local poor-law authorities. Church influence is usually to be traced both in securing the establishment of a station and in its subsequent management. In small places, the station is often operated in connection with some lodging-house, the keeper of which consents to care for the applicants and to give them work. In other places, the station is connected with a *Herberg zur Heimath;* that is, a cheap lodging-house under the management of the Home Missionary Society. There are now between nine hundred and a thousand of these *Naturalverpflegungsstationen* in operation. Reports from most of these (some failed to report) showed a total of 3,712 lodgers during the night from January 31 to February 1, 1888. As an aid in securing regular work for the unemployed, intelligence offices, or labor agencies (*Arbeitsnachweisanstalten*), have been organized at most of the colonies and at more than half the stations.*

The greatest defect in the present management of the stations is that many of them do not have work enough for their lodgers. In this case, either the accommodations are given without return or a small money charge is made. The former method is that of the free soup-house, and is attended with the usual evils. When the second

*On the general subject of labor agencies, charitable and other, see Ostertag, *Arbeitsnachweis als Mittel zum vorbeugen der Armenpflege*, in the *Schriften des deutschen Vereins für Armenpflege und Wohlthätigkeit*, Heft 1; Reitzenstein, *Ueber Beschäftigung arbeitsloser Armer und Arbeitsnachweis*, *ibid.*, Heft 4; *Münsterberg*, in the *Jahrbuch für Gesetzgebung*, vol. xii. p. 203 *seq.*

plan is tried, the tramp generally obtains by begging the few pennies necessary to pay for his entertainment.

The results of these elaborate attempts to aid the unemployed have been much debated. The *Correspondenzblatt für die Interessen der deutschen Arbeiter-Kolonien* is a monthly publication of thirty-two pages, now in its seventh year. Like most organs of philanthropic undertakings, it gives a very favorable view of the experiments, yet states with great fairness the objections that are urged. On the cover of this periodical is a pair of "before and after" pictures. One is that of a ragged, disreputable-looking tramp, with a heavy cudgel under his arm. The other is that of a man with good clothes, a waxed moustache, a turn-down collar, and a neat walking-stick. Letters from ex-colonists are published from time to time, which indicate that in some cases such a transformation has been wrought, and that in very many instances a man who was degenerating into a loafer has been set aright, and restored to the ranks of contented and efficient industry. The most available statistical studies of the results reached are those of Dr. G. Berthold, of Berlin, to whose papers, prepared for the *Verein für Armenpflege und Wohlthätigkeit*, I am chiefly indebted for the tables of results here used.

From Table III. in the Appendix, it appears that, during the administrative year 1886–87, 1,470 out of 5,934 colonists dismissed from sixteen colonies, or about twenty-five per cent., left because they had found work or because work had been found for them. The subsequent history of these men is not easy to trace, but it is known that many of them do not retain their places for any considerable time. Sometimes they are dissatisfied, and sometimes their employers are. Von Reitzenstein suggests that there ought to be persons in each community who would keep up acquaintance with ex-colonists, and encourage them. This friendly individualizing of cases has been

found one of the most efficient means of saving the men from degeneration. Of the 3,427 dismissed at their own request, it is thought that a very large proportion resume the life of the tramp (*Landstreicher*), though this is not necessarily the case.

Berthold has devised for the use of the colonies a system of card records, each man being given a separate card, on which are tabulated all obtainable facts that can be of use to the statistician. This card catalogue of cases is almost exactly like that kept by an English or American Charity Organization Society. On bringing together the case cards from all the colonies, and arranging them alphabetically according to the names of the colonists, it is possible to trace an individual from one colony to another. Using this system to test the use made by the men of their earnings, many cases of prompt extravagance were found: R. leaves Wilhelmsdorf with 63 marks, and three days afterwards is admitted to Elkenroth, having nothing; H. leaves Wuncha with 92 marks, and reapplies for admission in five days, having nothing.*

This tendency of the ex-colonists to reapply for admission is one of the discouraging features of the work. It is the purpose of the colonies to graduate their inmates into independence, and the persistent returns indicate that they are failing of this result. There has certainly developed a class of "colony bummers" (*Koloniebummlern*), who go from one colony to another, with brief periods of wandering freedom between dismission from one and admission to another.† Von Reitzenstein sug-

*Berthold, *Weiterentwickelung der deutschen Arbeiterkolonien*, p. 19, and following, where many cases are given.

†From Berthold, pp. 6, 7, I copy the records of two of this class, so far as they have been traced. Marsch., born March 6, 1830; at Kästorf from May 7 to September 1, 1883, 116 days; at Seyda from January 1 to June 15, 1884, 142 days; at Kästorf from July 2 to September 13, 1884, 73 days; at Seyda from November 15, 1884, to March 2, 1885, 107 days; at Dauelsberg from March 6 to June 22, 1885, 108 days; at Kästorf from June 29 to September 18,

gests the organization of home colonies (*Heimath-Kolonien*), to which those who are not able to get on in the outside world may be sent. As branches of the work at Wilhelmsdorf, there have already been established an asylum for inebriates and a home colony for cripples. In connection with Dürring, experiments are begun towards allowing men unfit for competitive life to take up plots of ground, on which it is hoped they may be able to support themselves. It has been suggested as a possible way of checking the tendency to recidivism that the time of unremunerated employment be lengthened each time a man is readmitted. Certainly, if the colonies are to continue to be places for the treatment of acute cases of lack of work, some way must be found of preventing them from filling up with chronic cases.

From Table IV. in the Appendix, it will be seen that more than three-fourths of the colonists are ex-prisoners,—a fact of very considerable importance, indicating the character of the men who apply for work charitably provided. It is evident that a large portion of the work of the colonies corresponds to that done in this country by the

1885, 111 days; at Seyda from November 3, 1885, to April 5, 1886, 153 days; at Meierei from May 5 to September 6, 1886, 124 days; at Seyda from November 25, 1886, to May 9, 1887, 165 days. Four times he was dismissed from a colony at his own request, and three times because of the expiration of the period during which a man might remain at the given colony. The reasons for leaving at the other times are not given. Only twice did he leave with any earnings, the amount being in one case nine and in the other eighteen marks. The other case is that of Ri., born June 16, 1844; at Berlin December 22, 1884, to January 11, 1885, 20 days; at Berlin from January 25 to April 10, 1885, 75 days; at Berlin from May 7 to May 20, 1885, 13 days; at Berlin from June 8 to July 17, 1885, 39 days; at Friederichswille from August 28 to September 29, 1885, 32 days; at Berlin from May 5 to May 21, 1886, 16 days; at Wuncha from August 14 to September 30, 1886, 47 days; at Berlin from March 11 to March 14, 1887, 3 days. He was dismissed three times on his own request, three times because work had been found for him outside the colony, once on account of drunkenness, and once for insubordination. The first of these two men was probably a representative of the helpless, inefficient class, who would gladly find a home where all responsibility might be put off; while the second seems to have been the representative of a younger, more vigorous, and more dissolute class.

Prisoners' Aid Associations. Probably some of the more respectable of the out-of-work classes are deterred from seeking admission to the colonies because of the low average character of the inmates. An English visitor to the colonies tells us that "occasionally a thoroughly reliable workman asks admission from sheer inability to find work."

Turning to consider the results of the *Naturalverpflegungsstationen*, we find it generally conceded that they have materially reduced the amount of vagrancy, and have been a most efficient weapon in the hand of the societies against mendicancy. It is urged against them, on the other hand, that, while attempting to increase "artificially" the mobility of labor, they have promoted useless wandering, and have made it easy for apprentices and others to leave steady employment and go off for a tramp. Habits of vagabondage are thus encouraged, and the evil increased that it was intended to cure. Definite figures sustaining or disproving this criticism are hardly obtainable; but the evil, if it exists, seems not incapable of mitigation. It is hoped to secure a more uniform administration of the stations than at present exists, and then to require all who travel by the help of them to carry cards (*Wanderkarten*), which shall be stamped and dated at each station. The applicant for lodging will then be required to give a consistent account of himself; and, if the dates on his card show that he has really been making definite progress towards some particular point, he will be lodged and given work. But, if his card indicates that he is wandering about aimlessly, or if he has no card, and cannot satisfactorily explain his presence in the neighborhood, he will be turned over to the authorities to be treated as a vagrant. Such cards or other credentials are now required at many of the stations.

A great deal of stress has been put upon the decreasing

number of persons annually sent to correctional institutions, as proving the value of the colonies and stations. In 1882, when the first colony was established, there were 28,027 persons sentenced to correctional institutions in Prussia. In the administrative year 1887–88, the number had fallen to 19,180.* All of this decrease should not, of course, be attributed to the influence of the colonies and stations. Berthold thinks that changed industrial conditions have had much to do with it. He also points out that the decrease in the number of convictions has been marked in some provinces where there is no colony. Too much cannot be made of this latter point, since the influence of a colony might be expected to extend beyond the boundaries of a single province; and, moreover, the provinces which are instanced as having no colonies do have stations.

At present, the management of the German Laborers' Colonies is intelligent and vigorous. If it continues to be so, there seems to be no reason why they may not continue to aid the unemployed, repress mendicancy, and eventually lessen the demands upon themselves by the healthful diminution of the numbers of the class they serve. But there is no magic in their machinery. It will not run itself. It is entirely possible for a colony to add to the almshouse and the jail another overcrowded winter resort for tramps, and so to increase the evils it tries to lessen.

As to educative charity work in England, it may be said that "the Poor Law has come to the conclusion that, while it can educate and train children, it can only relieve and give tasks to adults, and for their reformation can do little or nothing."† A few desultory experiments by private parties have been directed chiefly to the testing

* Berthold, in the article *Arbeiter-Kolonie* in the *Handwörterbuch der Staatswissenschaften*.

† *Charity Organization Review*, vol. iv. p. 82.

of the capacity of men it was proposed to send to the British colonies, and to giving such prospective emigrants some knowledge of agricultural labor. In the United States, no extensive experiments of this sort have been undertaken, though certain isolated enterprises have been well managed, and have achieved encouraging success. Among such cannot be included the average "mothers' mission," in which the ladies of a wealthy church pay a high price for poor sewing, and are as likely to teach lessons of dependence as anything more helpful. But among truly successful enterprises may be mentioned the Co-operative Sewing Society of Boston and the Central Work-rooms and Laundry of the Bureau of Charities of Brooklyn. At the Brooklyn Work-rooms, unskilled women, without recommendations, are given employment in coarse sewing, knitting, braiding rugs, making mats, and the preparation of material for rag carpets. No matter how forlorn and disreputable a woman may be, if she wants work, and is able to pick black rags from white ones, she can have employment at these rooms and support in return for what she does. If, after a long trial, she cannot or does not improve, she may be persuaded that the almshouse is the best place for her; but, while she shows any possibility of becoming self-supporting, she is kept at work. From the work-rooms women may be promoted to the laundry and training-school, and finally go back to ordinary life, having received certain things that cannot be bartered away,— some little skill, habits of industry, and knowledge of their own improvability.

Mr. Buzelle, General Secretary of the Bureau of Charities, thinks that "the value of the industrial education as an opportunity for friendly influence far exceeds the commercial value of the added ability to do certain things." Funds, and the machinery begotten of them, cannot solve the problem. "There must be an adequate number of qualified people, one of whom will become personally

acquainted with one of the unemployed, so that each employee shall have an intelligent personal friend, whose effort will be to see the employee physically, mentally, and morally equipped to some hopeful degree for the struggle of life, and whose friendship will follow the employee through the training and out into the subsequent struggle and to the end of it."

(III.) Mr. Charles Booth, in his elaborate studies of the population of East London, comes to the conclusion that the "poverty of the poor is mainly the result of the competition of the very poor," and that the entire removal of the latter class from the daily struggle for existence is the only solution of the problem of poverty. A contributor to the *Charity Organization Review* has suggested the creation of a class of State slaves, living in celibate working colonies, and only permitted to get back to the world at large as a reward of hard work, and then only under very careful restrictions. The purpose of Mr. Herbert V. Mills's book on *Poverty and the State* is to plead for the isolation of those not adapted to competitive industry, and their removal to colonies wholly isolated from the rest of industrial society. He would have these colonies produce only for themselves, and thinks that they could undoubtedly be self-supporting.

Such propositions at first sight seem startling. It is not generally known that experiments on similar lines have been in progress in Holland since 1818. In that year, General van den Bosch secured the organization of a permanent *Kommissie van Weldadigheid*, of which Prince Frederick was president and himself the second assessor. From a knowledge of certain Chinese colonies in Java, he had become convinced of the practicability of employing poor or pauper laborers in fertilizing and cultivating barren soils; and he believed that in this way able-bodied indigent persons of good character might be made self-

sustaining, provided funds could be obtained to purchase the waste land and to maintain the families until it became productive. The movement was popular, and the support generous. Several free colonies were undertaken, the first, largest, and most enduring being that of Frederiksoord, on the heath land between the provinces of Drenthe, Friesland, and Over-ijssel. The establishment of the beggar colonies, which are semi-penal settlements, began in 1820, the two largest being Ommerschans and Veenhuizen. The interesting history of these colonies from the beginning cannot be here given. They went more and more deeply in debt until 1859, when the free and beggar colonies were put under separate management, and the public authorities came to the financial relief of the *Maatschappij van Weldadigheid* (Society for Benevolence). The net gift of the State to the association amounted to about 5,535,000 guilders.

At present, the management and support of the free colonies rest entirely with this association, which has branches in all parts of Holland. On the payment of 1,700 guilders, any branch association is entitled to have a poor family at the free colonies in perpetuity. All needed income above the earnings of the colonies is obtained in the form of gifts, legacies, and contributions from the branch associations. The colony of Frederiksoord has a tract of about 5,000 acres, divided into six model farms of about 200 acres each, and 224 small holdings, each occupied by a single family. The model farms give work and support to about ninety persons each. The average number of individuals at the colony during the past fifteen years has been 1,790, including orphans boarded with different families.

New families are selected by the branch associations that have paid for the right to send them, and are given an outfit and transportation without expense to the colony. After admittance, any family can go away that

wishes to do so; but none are ever compelled to leave except for violations of the rules. About nineteen-twentieths of the families sent are town-bred people. They are first placed among the laborers on one of the model farms, and, after serving an apprenticeship of varying length, are given the care of a small farm, with an outfit, on easy terms. These "free farmers" pay a rent but little, if any, below that demanded by private landlords for similar land. The work obtained from the colonists is said to be distinctly good, the farms are well kept up, and the whole colony has an appearance of thrift and prosperity. Thoroughly good schools are maintained, as well as four churches,— two Protestant, one Catholic, and one Jewish.

Some shops are operated to give work in winter, and are a source of revenue, although outside competition has been found severe. The principal exports, as given by Willink,* are baskets, mats, and sacking, fat cattle, pigs, butter (a special product, which is all sold to the Jews of Amsterdam), cheese, buckwheat, wood, and tan bark. The leading imports are manure, hay, willows, cocoa fibre, lumber, cloth (from the beggar colonies), brick, some cattle, and coal. An early attempt to have all the transactions within the colony carried on by means of token money has been abandoned. The balance sheet at the end of 1886 shows assets to the amount of 1,324,672 guilders. The average annual amount of charitable subvention during fifteen years, as given by Willink, has been 16,405 guilders. The free farmer class are said to be entirely self-sustaining; but Willink points out that they are aided in certain indirect ways: rather low rent, and no interest charged on arrears; outfit given; cow, manure, and so forth, on easy terms; work to be had in the workshops of the Association, when there is nothing to be done

* Mr. Willink's four articles in Volume IV. of the *Charity Organization Review* are my chief authority for this part of my paper. The articles have been reprinted in pamphlet form. Mills's *Poverty and the State* also describes the Dutch Home Labor Colonies.

on the farm; cheap doctoring and education. Notwithstanding these advantages, they do not save, although they are apparently prosperous and contented.

As it is in the nature of the colony that it should be a home, but few new families can be received. As a matter of fact, less than half a dozen are admitted annually. The number of colonists has decreased from 2,007 in 1873 to 1,789 at the close of 1886. Between the energetic poor, who refuse to go to the colony, and the abject beggars, who will not be received, the number of available recruits is small, and apparently decreasing.

The beggar colonies are semi-penal settlements, managed and supported since 1859 by the government. A person convicted of begging is sentenced for a short term to jail, and in addition is sent to the colony for about three years. Some are also admitted on request, and some confirmed drunkards are also sent to the colonies. The population of the beggar colonies is about 3,000, many of the inmates being too old to work, and many too feeble and sick. The annual net cost of maintenance is 350,000 guilders, out of which hospitals are maintained, officers and soldiers are paid, books are purchased for the free library, and Protestant and Catholic clergymen and their churches are supported. Farm workshops are operated; but work is much hampered by the fear of "competing with honest labor."* It is hard to find enough work to keep all busy, and therefore clumsy machines and processes are used to make work. Besides support, the workers receive small wages, graded according to efficiency. Two-thirds of this they may spend, receiving the rest on dismissal. It is estimated that it requires fifteen of the colonists to do as much work as one efficient laborer. While the inmates are sentenced for definite terms, many of them like the freedom from care in the life of the colony, and

*The manufacture of shoes is forbidden to the colony by law; but, as cobbling may be done, a new shoe is obtained by twice repairing an old one.

are so expert at getting recommitted that they are practically inmates for life.*

Holland is much more free from mendicants than it was before the colonies were established; but, whether or not this is because the paupers have been isolated in the colonies, observers are not agreed. That this method of dealing with pauperism has helped to bring about the result named, there seems to be but little doubt. Those who are predisposed in favor of the colonies are prone to say that, if certain mistakes had not been made, they would have been financially as well as otherwise successful. It need only be answered that mistakes are such a constant factor in all industrial enterprises that it is necessary to allow for them in making calculations.

The review of these experiments brings into prominence the generally low standard of efficiency among those who apply for work charitably provided. Many who would be classed among the deserving poor and the able-bodied, are not, so to speak, able-minded. They lack inventiveness, energy, power of initiative. The men who go out from the German Laborers' colonies often fail to give satisfaction, because they need such constant and minute direction in all they do. A recent writer on criminal anthropology,† in commenting on the failure of certain Parisian beggars to do work offered them, says that "it is not sufficiently known that these poor creatures are already, by the facts of their physical organization, cut off from the great body of humanity." This raises the question whether the competitive organization of industry does not, after all, provide a place for every really efficient laborer. I asked Mr. Buzelle, of the Brooklyn Bureau of Charities, if he

* Mr. Mills tells of a gardener who had been sentenced fifteen times. He could not succeed as a gardener outside, but suited the manager of Veenhuizen.

† H. Ellis, *The Criminal*, pp. 222, 223.

found it difficult, as a rule, to secure regular situations for faithful and efficient workers. His answer was, "For faithful, yes; for efficient, yes; for faithful *and* efficient, no." Must we then conclude that the wasted labor force said to be embodied in the "unemployed" is, like the slaty refuse of a mine, not worth utilizing? There are those who would answer this question in the affirmative, and would say that there is no problem of unemployed; that, if a man is out of work, he is presumptively useless, one of the unfit, and his failure to survive should not be a matter of regret. But such a conclusion is surely unwarranted, because voluntary idleness, mental incapacity, physical degeneration, and the habits and vices from which these ills are immediately derived, are themselves often begotten of enforced idleness and other unfortunate conditions. If we insist on considering the laborer as a "product," we must admit that he is not, like a native mineral, the product of forces wholly beyond our control, but is rather the product of a species of homo-culture, the processes of which may conceivably be varied. Factory legislation and free education are examples of conscious variation of this sort, and their industrial justification is found in the higher standard of efficiency produced. The problem of the unemployed is not dismissed by simply proving that the unemployed are not efficient. It is rather rendered more important and more intricate.

Superficially considered, the three classes of experiments on behalf of the unemployed seem to have been failures. The attempt to give temporary work resulted in the conviction that many of the unemployed must have industrial training before they could be dismissed as permanently self-supporting. The attempt to give industrial training resulted in the conviction that many of the unemployed could never be qualified for ordinary industrial life at all. And, finally, the attempt to provide artificial conditions of existence for selected cases has failed to show

that those unfit for competitive life can be so organized as to support themselves and their superintendents and teachers. "To farm waste land with bad labor" has not been found profitable in a money sense. Yet all this amounts only to saying that no mechanical solution of the problem of pauperism has been found. No cure-all has been discovered, to be sure; but at each stage of the experimenting some cases have been reached, some cures effected. And it must be noticed that, if the direct benefits to the unemployed have been fewer than was hoped, the benefits accruing to the general public have been clear and steady. The negative side of the work has been more successful than the positive, the deterrent has been more pronounced than the reformatory influence. The experiments reviewed in this paper have lessened mendicancy by lessening the amount of indiscriminate giving, and of consequent degradation. They have afforded the thoughtless almsgiver a satisfying reason for withholding his mischievous doles; and, rightly considered, it is as beneficent a work to prevent falling as it is to raise the fallen. Certainly, the results obtained justify continued experiments on similar lines.

AMOS G. WARNER.

BOEHM-BAWERK ON VALUE AND WAGES.

In his extremely kind notice of my *Working Principles of Political Economy*, in the April number of this *Journal*, Dr. von Boehm-Bawerk expresses an unfavorable opinion regarding my treatment of Value and Wages. His suggestions as to a better mode of handling these subjects deserve attention. The appearance in English, promised for an early date, of his own great work* offers an opportunity for discussing the points he has raised. The *Positive Theory of Capital* aims to establish a new way of treating these fundamental topics. It is a book of very unusual character, and is likely to supply students of political economy with food for reflection for many a day to come. I think nobody who reads it can fail to admire the author's method, and the clearness, cogency, and steadiness with which he develops his views. His appeal throughout is to the visible facts of industry. By analysis of these and by reflection upon the results, he aims to make economic theory a sort of transcript and epitome of the industrial life of nations. Further, the tone of the work is as admirable as its method. The author finds himself at greater or less variance with almost every other economist, living or dead; but his criticism of other men's views is always so moderate, and so considerately expressed, that not even the most sensitive could take offence. The whole book is a model of scientific work done in the scientific spirit.

As to the modifications of theory for which the author contends, and especially as to the changed forms of statement he uses, I find myself unable in all cases to speak so highly. It does not seem to me that, as regards Value, he has succeeded in showing the old doctrines to be unten-

* *Positive Theorie des Kapitals.* Innsbruck, 1889.

able, or in giving us new doctrines that can be regarded as more satisfactory to take their place.

The primary object of his work is to establish a new theory of Capital and Interest; but in the course of his discussion he is under the necessity of touching on almost every part of economic theory. The essential features of his doctrines have already been very clearly laid before the readers of this *Journal* * by Mr. James Bonar, so that it will not be necessary for me to give here an account of the doctrine according to which interest depends on a difference of value between present and future goods. It needs to be remembered, however, that this doctrine goes with a different conception of value from that which American and English students ordinarily employ. Dr. von Boehm-Bawerk rejects the proposition that value depends on cost of production. He has adopted and worked out, with great fulness, the view that the value of every commodity depends on the lower limit of its utility, its *Grenznutzen*, or (as Jevons expressed it) its "Final Utility."

This doctrine is so complicated that I think no brief statement can do it entire justice. Those who would understand it fully, especially in its application to the theory of wages and profits, must be referred to our author's account of it. The object aimed at by the inventors of the new theory is to frame a law of value that shall apply to every transaction of the *do ut des* order between men. Such a law they find in the principle of Final Utility. In my humble judgment, the importance of the new theory has been greatly exaggerated by its advocates. After all has been said, they seem to me to have done little more than to put the familiar principle of demand and supply in a new and, as I think, less convenient form. As a fundamental law of value, it can hardly be regarded as an improvement on what we had before.

* In the issues of October, 1888, and April, 1889.

In the first place, it seems to me to ignore too much the true character of economic exchange, to which the law of value applies. It proceeds much as if every member of the community found himself, by accident, in possession of certain goods which he is desirous to exchange for other goods, provided he can do so on advantageous terms. He is willing to exchange with others only when the exchange brings him advantage; that is to say, when the thing he gets has greater utility for him than the thing he gives. Exchange is possible, therefore, only between persons who set a relatively different value on the things to be exchanged; and the more widely they differ in their view of the relative utility of the goods, the more easily and profitably they can effect the exchange. A has a horse, and B has wine. If, in his existing circumstances, A thinks the horse as good as ten kegs of wine, and B thinks ten kegs of wine as good as a horse, no exchange can take place. If, however, B's estimation be that a horse is as useful as eleven kegs of wine, exchange becomes possible. And in the exchange the value of the horse falls somewhere between ten and eleven kegs of wine. In the general exchange of commodities, the value of each is fixed by the estimation set upon it by those purchasers for whom it has least utility, their purchases being necessary in order to carry off the whole supply.

Now, this view of exchange, however much it may be elaborated, seems to me to be defective in a most vital particular. It does not keep in sight — certainly not sufficiently in sight — the true relation between economic exchange and the efforts of the individual to satisfy his wants. Under division of labor, the producer of each commodity is simply following the best method of obtaining the general assortment of commodities that he needs for comfortable living. To assume that his own product has for him any subjective value, as if he produced it with some thought of consuming it himself, is, to my thinking,

to assume a very unreal situation. The theory which connects value directly with cost has the great recommendation of putting at the front the important fact that exchange is simply a stage in the existing mode of providing for our individual wants. The doctrine that value tends to conform to cost is simply the assertion of the principle that men try to get the most they can for their industrial exertions. The new view does not deny this principle. It admits that experience reveals a correspondence between value and cost; but it seems to reject the theory that this correspondence is due to any control of cost over value. In the new view, the tendency of value to conform to cost is only an incidental case within the greater law of final utility. Cost is determined by value, not value by cost. The final utility of the commodity determines not only its own value, but the value of the materials and instruments used in the production of it; and the value of these materials and instruments constitutes the cost of the commodity. Thus the new doctrine finds between cost and value a relation directly the reverse of that which we have been accustomed to conceive.

The view of cost involved in this mode of reasoning has certainly abundant authority in the older writers. But later criticism has shown that we must distinguish between cost to the employer (or Cost of Labor) and the true or economic Cost of Production. No expounder of the law of cost would now define cost as "the sum of the means of production [*Productivgüter*] that must be used up in producing any commodity, — the portions of capital consumed, the labor, and so on." Much confusion has crept into economic discussion for want of a clear and consistent definition of cost; and Dr. von Boehm-Bawerk is, of course, not responsible for the misapprehension into which he here falls. Commodities do not cost both labor and capital, since capital itself is a product of labor. They do not cost both labor and wages, since wages are the reward,

and, in a way, the equivalent of the labor: to count both in the cost is to count the same element twice. Neither does true cost include both labor and abstinence, because the employer's abstinence results only in wages for his workmen; and there is the same objection to counting it in cost that there is to counting the wages themselves.

Looking at production in and by itself, it is obvious that the cost of every commodity consists only of labor; but the labor must be distributed in a certain way as regards time. The labor of the whole community could not produce a loaf of bread or a suit of clothes in one day. Production requires time; and the human burden involved in this requirement is the Waiting imposed on producers, after the outlay of labor, before the enjoyable result appears. Nobody has ever worked out this side of productive industry with greater clearness than Dr. von Boehm-Bawerk. I am accordingly somewhat surprised that he should have represented cost as consisting of labor and capital. His whole system implies that the cost of every commodity is the labor and waiting required for producing it.*

Now, if we hold fast this idea of cost, the admitted correspondence between value and cost will have to be accounted for in a different way from that adopted by our author. We can hardly say that the value of the product determines the value of the cost, since the cost consists wholly of burdensome effort, of sacrifices undergone to obtain the product. Yet I am by no means sure that Dr. von Boehm-Bawerk would not regard even Waiting as a

* It is necessary to have a name for the element of cost that answers to the need of time in production. I have used the word "waiting" as the name for this sacrifice on the part of producers. It is the simplest and most suitable designation that occurs to me. Dr. von Boehm-Bawerk says: "The disadvantage that goes with capitalistic modes of production consists in a *sacrifice in point of time* [*ein Opfer an Zeit*]. The circuitous methods of capital are fruitful, but time-consuming; they yield more or better product, but not till a later point of time" (vol. ii. p. 87). The idea here is the same that I have tried to express by the term "waiting." See this *Journal* for July, 1887, p. 481.

species of "goods," and would not assign to it the attribute of value. He constantly speaks of labor in this way, classing it, as "productive goods," with materials, implements, machines, etc. It is evidently not without reason that one who includes so wide a range of things under the head of commodities should wish to find a law for their value independently of cost of production. His list of goods includes too many things for which no cost could be assigned. Who can say what the cost of production of a day's labor is?

It may be, then, that those who take the new view of the connection between value and cost would still adhere to their doctrine, even if they accepted the corrected definition of cost. Yet it is difficult to see wherein they would improve thereby the character or the significance of economic doctrine. The statement that "the value of the cost is determined by the value of the product" does not seem to me to convey much, or indeed any, light. Holding that material commodities alone have true exchange value, that these belong to a wholly different category from the human exertions by which they are produced, and that the relation of product to exertion is that of reward, and reward only, I am unable to conceive of the attribute of exchange value as belonging to the cost of products. That would be to regard producers as carrying on a kind of exchange with nature, giving productive exertions in return for commodities. If we are ready to look on production in that way, we may of course speak of the exchange value of cost; and, since every commodity is always obtainable for the cost of producing it, there would be no doubt as to the exact equality in value of the cost and the product. But this way of looking at things does not seem to promise very useful results.

The connection between value and cost, if admitted at all, would seem to call for a different sort of recognition from that accorded to it by the new theory. Looking at

economic exchange as a continuous process, what explanation does final utility afford of the broad, permanent features of exchange? Apart from cost, why should an ounce of gold ordinarily have as great value as a ton of iron, a watch as great value as several pairs of shoes, a diamond as great value as many barrels of flour? The answer of the new theory seems to be that in each "concrete case" all the attendant circumstances are taken into account in fixing the final utility of each commodity. But, if this means that the cost of each article is one of the circumstances going to make up the concrete case, the answer seems to involve a begging of the question. The principle of cost is too broad to be admitted by a side door, or as an after thought. If the reason why coats have a higher value than shoes be that coats have a greater final utility, that ought to be the end of the story. To add, as an incidental circumstance, that coats are also more difficult to make, and so ought to have a higher value, has the appearance of putting the controlling factor in a curiously subordinate place. This is especially so when it is admitted that an invention which should reduce the cost of production of coats below that of shoes would have the effect of reducing their final utility also below that of shoes.

At the same time I have no wish to underrate the importance of the Final Utility principle. It may have undoubted significance for economic theory, but in a different direction, as it seems to me, from that which its advocates indicate. As a fundamental law of value, I think it can never satisfy critical readers. It must always, in the case of things producible at will, fail to explain anything more than the fluctuations of their value about the central point fixed by cost. But there is a field in which it may perhaps be turned to good account. We have as yet no satisfactory treatment of what may be called the proportional demand for commodities and the

changes to which it is subjeet. As I read Dr. von Boehm-Bawerk's exposition of the new doctrine, it seems to me that he is really not explaining why commodities exchange for each other in certain proportions, but is dealing with the question why, as between things having the same cost, men choose the one rather than the other, or choose to have much of the one and little of the other; why, when its productive capacity increases, a community chooses to enjoy its increase of spending power in certain forms rather than in other forms; why, in a word, the proportional demand for commodities is what it is. Here, if anywhere, the doctrine of final utility would seem to have a place.

The question whether labor is or is not properly to be regarded as a class of goods with an exchange value, a "ware" which men buy and sell for a "price," suggests the other great topic we have to discuss; namely, the theory of Wages. At the outset, I wish to say that, as regards the substance of the author's handling of the wages problem, his work seems to me admirable. He has shed a flood of light on every nook and corner of the subject. But, as regards his mode of using and interpreting the results of his inquiry, candor compels me to say that, in my judgment, he has not followed the best course. In his view, the phenomena of wages and profits (and rent as well) are all to be referred fundamentally to a single and very simple law; namely, the low value of future goods as compared with present goods. The employer, in hiring laborers, buys future goods in exchange for present goods. As time passes, the future goods so purchased rise in value as we approach them; and this rise of value constitutes the profits of the employing class. The level of wages at any given time depends on the quantity of present goods offering for future goods, as compared with the number of laborers offering future goods for present goods; that is, offering to be hired.

But this simple principle is very complicated in its practical operation, because it is necessary to discover what determines, in any given case, the quantity of present goods offering for a given amount of labor. On the effort to solve the difficulties of this question the author has evidently spent a great deal of study. His reasoning must be read in full, in order to be justly appreciated. In outline, it is as follows. The nature of industry is such that circuitous methods of production yield larger returns for labor than direct methods. Within limits, the longer time a community spends in preparing implements, machinery, and natural agents, the more its labor will yield; but beyond a certain point experience shows that the increase of product is in a lessening ratio to the increased length of time devoted to providing capital. For the purposes of his discussion the author assumes, as a working example, the following scale of productiveness. By productive period, it should be explained, he means the length of time that, on the average, elapses between the outlay of labor and the completion of the enjoyable product towards which the labor is directed. A productive period of one year means that, taking the average of its industries, the community expends its labor a year in advance of obtaining the product, a two-year period two years in advance, and so on.

Productive Period.	*Yearly Product for each Laborer.*	*Increase.*
1 day (no capital),	$150	
1 year,	350	$200
2 years,	450	100
3 "	530	80
4 "	580	50
5 "	620	40
6 "	650	30
7 "	670	20
8 "	685	15
9 "	695	10
10 "	700	5

If, now, the accumulated wealth (other than land) of the community be 15,000 millions of dollars, and the number of laborers be 10 millions, how is the level of wages determined? The author answers this question by showing that, with a given stock of wealth and a given number of laborers, wages will depend on the length of the productive period adopted by the employers. But the productive period most profitable for the employers depends in turn on the rate of wages they must pay. If laborers can be hired for $300 a year, the most profitable period, under the scale of returns assumed above, would be three years.* But the resources at hand are much more than sufficient to provide this rate of wages for 10 million laborers for a three-year period. The unsatisfied demand for labor would cause wages to rise. The rise of wages, however, changes the situation: a three-year period ceases to be the most profitable under the given scale of returns. If wages should rise to $600 a year, the most profitable period would be eight years. But for an eight-year period the existing stock of wealth is insufficient to provide this rate of wages for the whole number of laborers. Therefore, neither so high a rate of wages nor so long a productive period is possible. Thus, by the ordinary operation of commercial principles in presence of the existing conditions of production, a rate of wages and a productive period are evolved, under which the whole body of laborers, and the whole stock of means for the

*That is to say, an employer having $10,000 to invest would gain highest profit in the given conditions by employing twenty-two men on a three-year basis rather than thirty-three men on a two-year basis or seventeen men on a four-year basis. This is a matter of arithmetic. Those who wish to test it must bear in mind the author's principle, that only about half of the amount necessary for paying wages during a given productive period needs to be accumulated in advance. The wages of twenty-two men for three years, at $300 a year, would be about $20,000. Owing to the fact that production proceeds by stages (*Staffelweise*), a subsistence fund of $10,000 would, in the author's view, answer for twenty-two men on a three-year basis, wages being $300 a year.

payment of wages, are brought into active employment. The demand and supply of present and future goods are brought to an equilibrium.

This reasoning has obviously a resemblance to the doctrine of the wages fund, as indeed the author himself points out. It is, however, less rigid, and gives a more intelligent account of its own working in practice. It has in common with the old doctrine the fundamental principle that wages are an advance, and are at all times limited by the resources available for making advances. But the expounders of the old theory never sufficiently considered the full meaning of the truth that all capital, so far as regards its particular form at any moment, is perpetually consumed, and sooner or later has to be renewed in all its parts through the payment of wages. If they had, they would not have been content to say that wages depend on capital, without some effort to take into account the circulating period of the capital. This gap in their structure has now been amply filled. Not that the author of the *Positive Theory* can be truly said to have merely adopted and completed the work of the older writers. All that he has written he has evidently worked out for himself and in his own way. The analysis he makes of the phenomena connected with wages cannot be too highly spoken of. It leaves little for future writers to do but to follow, and this whether they accept or reject his cardinal principle of an exchange between present and future goods. When all writers on economics shall be ready to adopt, as frankly and conscientiously as he has done, the method of careful observation and analysis of the facts, we may hope for better agreement and more rapid progress in the development of economic theory.

Greatly as we must admire the method and general purport of the *Positive Theory*, there are some points of detail in which the procedure seems to me to be open to criticism. In the first place, I must avow some doubts as to

the entire validity of the author's arithmetic in the treatment of wages. The assumed scale of increase in the productiveness of labor, as the proportion of capital to laborers is increased, opens up a wide question of fact. The author appeals to experience in support of the principle involved, and that of course is the only evidence by which the matter could be determined. But the facts he adduces are not, in my judgment, sufficient to establish the very broad generalization he bases on them. The examples he gives are not simply cases of increased capital, nor simply of lengthened productive period. They are cases of introducing new inventions. Axes of steel are introduced for wood-chopping instead of axes of stone; elaborate blast furnaces and axe factories take the place of the simpler arrangements by which axes were formerly made; guns are introduced in hunting instead of the bow; nets and seines take the place of less costly contrivances for catching fish. The author alleges that the later additions to capital, in such cases, do not add as much to the productiveness of labor as the earlier ones. He also states with confidence that there is no branch of industry whose productiveness could not be materially increased by skilfully chosen prolongation of the productive period; and this without any new invention, but simply by the introduction of long-known devices. He adds, "How far is most of our [Austrian] agricultural and other industry behind the most advanced industrial models; and certainly these latter are themselves not less widely removed from an ideal, really complete equipment."

There seems to be, in this reasoning, a combination of two very distinct cases. The examples are hardly in line with the principle which they are used to introduce. The examples relate to new inventions, the conclusion to old ones. The invention of improvements in production goes on apace in the world. Later improvements may not increase production *in the same ratio* as earlier ones: the

second doubling of a thing that has already been doubled is always harder than the first. But it does not seem to me that that settles the principle contended for. If the existence of the scale depends at all on the coming of new inventions, we have no right to argue as if the whole range of the scale were open to investors every day. Any lengthening of the productive period must be made within the limits of existing industrial knowledge. As regards the more extended use of existing improvements at any time, we may undoubtedly assume a degree of elasticity. But whether, with a given number of laborers, this elasticity is as great as we are asked to believe; and whether, independently of the law of diminishing returns from natural agents, the additions to capital must fail to add correspondingly to the product, are questions of fact which I do not feel competent to answer. I have been accustomed to suppose that in any given state of our industrial knowledge there is a best way of setting about the production of every commodity,—one way that gives larger product for a given outlay of labor and waiting than any other. This way I have supposed to be best for all concerned, quite regardless of the rate of wages,— best because it is the way of least cost. The method of production that gives each commodity at lowest cost I have supposed especially to be the one best for the employers, quite regardless of the rate of wages. And this I have taken to be the common belief among practical business men as well as among economists. It is certainly not clear why the use of the most effective modes of production, to the full extent of the community's industry, should not increase the product *pari passu* to the limit. Neither is it clear to me how changes in wages could alter the interest of the employer in the choice of methods. The new theory, however, seems to assert that there is a descending scale in the increase of product obtainable by more extended application of each improvement, and that the

point of most profitable use depends on the rate of wages. If the proposition be true, it is a most interesting and important truth; but it seems to me to need stronger evidence for its support than has yet been supplied. I suspect that, in part, it is simply the familiar doctrine of diminishing returns from natural agents; but it evidently goes much beyond that doctrine.

A word of explanation may be needed here. The way of least cost seems to me to determine the mode of production at all times. But the way of least cost to-day may not seem the way of least cost a hundred years hence, even though no industrial improvements should be made meanwhile. Cost has two elements, and any change in the relative estimation of the two in the minds of those who bear the burdens of production, may have the effect of changing the line of least cost. An increased willingness to make the *Opfer an Zeit*, a readiness to submit to waiting for a less inducement than before, may result in increase of capital wherever the change opens up a new mode of least cost in the production of any commodity. If this be our author's meaning, the principle may be readily assented to. But I do not so understand him.

The question before us suggests the objection raised by Dr. von Boehm-Bawerk* to the view of wages presented in my book. I avowedly treated wages, as well as the profits of employers, from the standpoint of the enjoyable results of industry. It was my view that the important question in regard to every industrial arrangement is how it affects the quantity of enjoyable commodities accruing to each and all of the men who are concerned in it. This is still my view. Therefore, the problem of wages seems to me still to be contained in two questions: first, What determines the amount of enjoyable product at the disposal of the community from week to week? secondly, What determines how large a part of this total product

* In this *Journal*, April, 1890, p. 335.

shall go to hired laborers? But the objection is made that the total product of a community's industry during any period includes not merely finished enjoyable commodities, but also materials and machinery for the production of future commodities. The laborers, it is urged, may choose to take as their pay, in greater or less part, these materials and machinery. From my point of view, the answer is simple. So far as laborers take machinery or other capital as the reward of their labor, they work for the future, they become capitalists. Though they may have been hired laborers in form, they have not been such in substance. The true reward of their labor will come to them later, when their capital results in enjoyable commodities. When that time comes, their share in the enjoyable product of the community's industry will follow the general principle: it will be greater for their present self-denial. They will have both the reward of labor and the reward of waiting. But they cannot have both wages now and that future reward later. The case therefore seems to me to have been fairly well covered by the general principles stated in the earlier portions of my book. In a small book on a large subject, one has to leave many subordinate things unsaid that a full treatment would include.

Further, if one were professing to follow out the consequences of every possible variation in the use laborers make of their money wages, one would have to go much beyond the point indicated by this objection. For, obviously, laborers may buy land or other natural agents as readily as "capital goods"; yet Dr. von Boehm-Bawerk, in his own treatment, expressly excludes land from the body of wealth acting on wages. Again, some laborers may save from their money wages the means of hiring other laborers. In fact, my impression is that this rather than the purchase of "capital goods" is the form in which saving by laborers takes effect in actual practice.

If this be true, the immediate consequence of such saving, if it be a new thing, must be found in a change of the wages of other laborers. Whether it shall or shall not increase the working capital of the community would depend on the particular circumstances of each case. It might conceivably affect only the ownership, and not the amount, of the community's capital. Even on the wages of labor, the effect might be only temporary, since the attendant fall of profits might check the flow of savings from some of the old sources. At all events, in all these cases we seem to me to have, not contradictions of the law of wages, as I have tried to state it, but rather reminders of the presence and simultaneous action of a law of profits and a law of rent. The business arrangements of every country make it easy for the individual to choose the form in which he shall take the reward of labor; but this seems a poor reason for attempting to formulate a law of wages that shall be also, in part, a law of profits and rent. Shall we not have sufficiently dealt with the problem of wages when we shall have satisfactorily treated the case of those who work for wages pure and simple? And in their case is not the question, for any given time and place, one that relates to the enjoyable product of industry then and there offering for the payment of wages?

Returning to our author's own treatment of these subjects, it seems hardly probable that the form in which he states his central principle will receive unqualified approval. It goes without saying that the average of mankind think more of the present than of the future; or, perhaps better, that men concern themselves more about the immediate future than about the more distant future. But to make this elementary commonplace the basis of a whole economic philosophy seems to me a very unfortunate choice. There is, I think, nothing in the idea that could not have been quite clearly expressed in other

ways. Carried over into the theory of value (and prices), it seems to me to introduce new elements of difficulty and confusion into a region already sufficiently charged with those qualities. To be quite frank, Dr. von Boehm-Bawerk has failed to show, I think, that we should gain anything by treating questions of wages, profits, and rent as questions of value. On the contrary, it seems to me clear that we should lose much.

In the first place, we need a treatment of the principles governing the exchanging ratios of products actually in the market. We need a name for the quantity of other products any given product will exchange for, both the thing sold and the thing bought being actually present and delivered. We need other names and other treatment for those dealings between men in which actually present commodity is given, not for another product also present, but for a service or consideration of some other kind. If we had not separate names for buying and hiring, for lending and selling, we should have to invent them for the sake of clearness. Having them, we ought, equally for the sake of clearness, to keep them distinct. Yet this new way of speech, in which the hired laborer sells future goods, and the source of the employer's profit is the low present value of the future goods he buys, asks us to abandon the advantage our existing economic vocabulary affords. If we should adopt it, we should hereafter have to explain ourselves whenever we mentioned value, telling whether we meant value in immediate exchange, or in exchange for goods of the future, or a mean of the two. The value of a commodity might change in the one sense, but not in the other. In the new sense, the value of every commodity would fall if wages should rise. But this is a change that would not be felt by buyers and sellers in the ordinary market, since it would not necessarily affect prices at all.

This objection may be put in another way. The value

of every commodity, in economic exchange, is expressed in terms of other commodities. In the new sense, the value of each may be expressed in terms of itself. "The value of a bushel of wheat is a bushel and a half of future wheat" becomes, under the new phraseology, a perfectly legitimate expression. I cannot think that the author has disposed of Knies's objection on this head. It seems clear that the new doctrine involves a radical change in the definition of value.

The objection on the ground of mere terminology, serious though it must be considered, is far from being the chief objection to the author's method of dealing with the relation between wages and product. The conception of value involves, as I suppose, the notion of a definite quantity of commodity on each side of the exchange. The value of a bushel of wheat is the definite quantity of any and every other commodity for which it may be exchanged. But, in this assumed exchange of present for future goods, definiteness on the side of the future goods is impossible. What the employer actually obtains is services,—physical and mental exertion of a specific sort on the part of the laborer. He gives in return, no doubt, a definite quantity of present commodities; but there are many causes of uncertainty as to the quantity of similar commodities he can obtain later in return. Neither employer nor laborer can know exactly how much of the single commodity they produce the labor will result in. Secondly, neither of them can know exactly what the value of the product will be when completed,—how much it will exchange for in terms of that general assortment of commodities that the wages include. How, then, shall a relation of value be predicated between present wages and future product? The *agio* of which the author speaks can have nothing of the definiteness that belongs to a real *agio*. The employer pays the wages and takes his chances.

This element of uncertainty alone seems to me to exclude the relation of value, in the case. But, even if the product could be quantitatively determined in advance with precision, I should still think it inadmissible to speak of the laborer as giving future goods in exchange for present goods. In a strict sense, in any sense that scientific precision could admit, he gives nothing of the sort. Neither does he even give the means of procuring future commodities. All he has to offer is his labor, and labor is but one of the requisites of production. Even if he offered natural agents as well as his labor, it would still be inexact to speak of him as offering future goods; for shall we forget the employer's own services in production?

The whole attempt to interpret the relation of product to wages as a case of value seems to me an unfortunate error of judgment. The old view, which saw only a quantitative difference between them, seems to me the sound and natural view. The excess of product over wages, of which we have been accustomed to speak, presents a definite and tangible conception of the source of profits. The excess is regarded as ascertainable by physical measurement after the return is realized in full,— so many yards, pounds, bushels, more than the laborers received as wages. And there is no suggestion that it could have been known in advance. Since the commodities paid as wages were the same in kind as those that constitute the product, the relation of value can hardly be predicated between them, viewed as aggregates of wealth. What employers strive for is increased quantity of wealth. All the circumstances that enable them to obtain such increase may be analyzed and described with entire clearness, as it seems to me, without carrying over into the field of investment and return ideas and phrases that belong properly to the field of economic exchange.*

*The question *how* capital yields income, to which our author devotes so much space, can never be difficult for one who has mastered the obvious distinction, so well brought out by our author himself, between savings and working capital. Savings as such produce nothing: abstinence in itself produces

To speak of the value of commodities that are not yet in existence is to employ a mere figure of speech. To speak of their value increasing as they approach existence, and to represent this increase of value as the source of the profits of employers, seems little short of indulging in merely fanciful language. Here, as elsewhere in political economy, we need to use a terminology that shall adhere closely to the observable facts. It seems to me, therefore, matter of regret that the author of the *Positive Theory* had not given us the results of his powerful analysis and reasoning in terms more in keeping with the simple facts and more consonant to the well-established usage. He evidently, but as I think mistakenly, considered it desirable to bring all economic transactions between men under one and the same law. To do this, he seems to have seized upon the common feature of give-and-receive, and the common motive of self-interest in all such transactions, as furnishing the key to all economic questions. To minds that crave all-embracing generalizations, this point of view may have great attractiveness; but it is not easy to see how we can hope for practical or theoretical advantage in that direction. The occasion that gives rise to economic exchange of products differs *toto caelo* from that which gives rise to working for hire and the investment of savings. The common feature of give-and-receive seems to me to be but a superficial coincidence. If we attempt to couple in one formula things so divergent in all their essential features as the giving of labor for goods and the giving of goods for goods, our formula, as I think, must either be devoid of significance, or must be untrue, on the one side or the other, to the real nature of the phenomena it is intended to explain.

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nothing. Savings are only for the payment of wages in advance of product. They are no part of the apparatus by which the product is brought into existence. But the employers, who advance the wages, own the product when completed, and, as already stated, the excess of the product over the wages paid out in the course of its production, constitutes the employers' profit. This is so simple that he who runs may read. Why obscure the clearness of it by raising a question of value in the case?

A CENTURY OF PATENT LAW.

AMONG the powers conferred upon Congress by the Constitution is the power "to promote the progress of science and useful arts, by securing for limited times, to authors and inventors, the exclusive right to their respective writings and discoveries." Under this power, Congress on the tenth day of April, 1790, enacted a statute entitled "An Act to promote the progress of useful arts," which was the beginning of the patent legislation of the United States. During the century which has elapsed since the passage of this act there has been in force in this country a body of statutes which are spoken of collectively as the Patent Law. Numerous cases have arisen and been brought before the courts of the United States calling for the interpretation of these statutes. It is a fitting time to inquire into the results of the legislation and judicial decisions which owe their existence to the power of Congress to promote the progress of useful arts. Have these results justified the grant of the power and its exercise by Congress?

The act of 1790 specified the subjects for which patents might be granted as the invention or discovery "of any useful art, manufacture, engine, machine or device, or any improvement thereon not before known." This enumeration of the subjects of invention has not been materially changed, the language of the statute now in force being "any new and useful art, machine, manufacture, or composition of matter" or improvement thereof. Under the English Statute of Monopolies, all subjects of invention had been embraced in the simpler phrase "any manner of new manufacture." Applications for patents under the act of 1790 were made to the Secretary of State, the

Secretary of War, and the Attorney-General; and they or any two of them were to decide upon the issue of the patent.

The right secured by a patent was the "sole and exclusive right and liberty of making, constructing, using, and vending to others to be used," for a term not exceeding fourteen years, the invention or discovery. The patentee was required to furnish a description in writing of the invention, with models to illustrate it where the nature of the invention admitted of a model. The sixth section of the act contained a further provision, which distinguished our law from the English law and which has proved of great value to inventors. The patent was made *prima facie* evidence in any suit that the patentee was the first inventor and that the invention was truly described. In England the burden of proof, when these facts are put in issue, was upon the plaintiff; and it was not always easy to furnish the evidence required. Under the act of 1790, if these facts were denied by a defendant, the burden of proof was upon him to establish his denial; and the shifting of the burden of proof made it much easier for a patentee to enforce his rights. This provision of the act of 1790 has remained a part of our patent law to the present time. Models have not been required for many years. The act contained no limitation of its benefits to citizens or residents of this country, but in terms provided that "any person" who had made an invention or discovery, such as was specified, might receive a patent,—a feature of the law which is interesting in connection with subsequent legislation.

The act was approved April 10, 1790. The first patent granted under it was dated July 31 of the same year, for making pot and pearl ashes; and only two more patents were granted during the year. It continued in force until February 21, 1793, and only fifty-five patents were granted under it. One of these—the first in a long

series of inventions not yet ended — was to John Fitch for propelling vessels by steam, an invention which has proved to be of incalculable value to this country and to the world. Such was the beginning of the history of the patent law of this country.

On February 21, 1793, another act took the place of that of 1790, but made no important change in the requirements imposed upon inventors as a condition for the grant of a patent or in the rights secured to them, except that the benefits of the law were limited to citizens of the United States. The administration of the law as to the issue of patents was committed to the Secretary of State and the Attorney-General. An applicant for a patent was required to make oath that he believed himself to be the true inventor. An act of April 17, 1800, extended the right to take patents to aliens who at the time of petitioning had resided for more than two years within the United States. The right to secure a patent was also extended to the legal representatives of an inventor who had died before a patent was issued to him.

An important change in the mode of administering and enforcing the patent law was introduced by an act of February 15, 1819, giving to the Circuit Courts of the United States jurisdiction in equity of actions for the infringement of patents, with power to grant injunctions to prevent the violation of the rights of inventors. No other provision for the protection of the rights secured by patents has been so effectual as this power to restrain infringements by injunction. It is constantly invoked, and without it the courts could not practically secure to inventors the exclusive right to their inventions which is contemplated by the Constitution. With the exception of a provision in an act of 1832, recognizing a practice, already established, of reissuing patents to correct mistakes, no other important change was made in the patent law before the repeal, on July 4, 1836, of all pre-

vious acts and the inauguration of a new system for the grant of patents.

During the period of a little more than forty-six years after the enactment of the first law in 1790, the number of patents granted, exclusive of reissues, was 9,957,—a number now exceeded in a period of six months. The highest number granted in one year under the act of 1793 was 751, in the year 1835. Early in the list of patents granted under the act of 1793 was the memorable one granted to Eli Whitney, March 4, 1794, for a machine for ginning cotton. Another notable invention was patented three years later by Amos Whittemore for "improvement in manufacturing wool cards." A patent was granted to Thomas Perkins in February, 1794, for manufacturing nails; and within three years twelve more patents were granted relating to the same manufacture. Among the patents of 1796 is one to Elisha Perkins for removing pains by metallic points, probably the devices which became notorious as "Perkins Tractors." The whole number of patents issued before 1800 was 256, a little more than one-half the number now issued weekly. The number issued in the last ten years, from 1880 to 1890, was 195,454, or more than eight hundred times the number during the first ten years of the patent law.

The act of 1836 introduced a radical change in the patent law, so far as it related to the grant of patents. It created an office, attached to the Department of State, to be called the Patent Office. The office has since been attached to the Department of the Interior. The first section provided for the appointment of a Commissioner of Patents, who was to have charge of the office, and was required to superintend and perform all duties touching the granting of patents. The conditions under which an applicant was to be entitled to a patent were substantially the same as under the act of 1793, and foreigners were placed on the same footing as citizens except as to the amount of the fees to be paid.

The term for which patents were granted was, as under the previous acts, fourteen years; but an important innovation was introduced in favor of patentees. Provision was made for the extension of a patent, upon the expiration of the term for which it was originally granted, for a further term of seven years, if upon a hearing before a board consisting of the Secretary of State, the Commissioner of Patents, and the Solicitor of the Treasury, it should be made to appear that a patentee had failed, without neglect or fault on his part, to obtain a reasonable remuneration for the time, ingenuity, and expense bestowed upon the invention, having due regard to the public interest. By an act in 1848, the power to extend patents was conferred solely on the Commissioner of Patents. Under this provision, applications for the extension of valuable patents became very common. As the value of an invention to the public was assumed to be indicated by the extent to which it had been used, the curious result followed, in many cases, that the receipt of a large sum by a patentee from his invention became evidence of its great value, and so became a reason for granting an extension rather than for refusing it. Especially was this the case when, as often happened, the inventor had sold the invention before its value was established, and the profits of it had been secured by assignees. As the invention was to be for the benefit of the inventor and not for that of assignees, it was necessary for him to have the title to the invention in order to secure the extension. If he had parted not only with the original term of the patent, but with any extensions of it which might be granted, it became necessary for him and his assignees to make some arrangements to give him a valuable interest in the extended term. The result, therefore, was that the assignee often secured a large share of the benefits of the extension. If, on the other hand, the inventor had granted no interest in the extended term, and an exten-

sion would inure wholly to his benefit, it would generally be for the interest of assignees to oppose an extension; and thus it often became necessary for an inventor to silence their opposition by some arrangement, giving them an interest in the extended term. The inventor, therefore, often failed to receive the whole benefit of an extension. It was often the case that he received very little.

It can be easily seen that the interest of the public was opposed to extensions. The evidence which was laid before the Patent Office in investigations as to the value of particular inventions was by no means the *ex parte* testimony of interested parties: for the law required the fact of an application for the extension of a patent to be published in one or more of the principal newspapers in Washington and in such other papers as the Commissioner might deem proper in the section of the country most interested adversely to the extension of the patent; and further provided that any person might contest the extension. In fact, many of the applications for the extension of patents were vigorously contested. It was abundantly established by these investigations that the most fortunate inventors received as the fruit of their invention but a small part of the value of the invention to the public. But it appeared in many cases that this small part amounted to a large sum. Elias Howe was compelled to admit, when he applied for an extension of his patent on the sewing machine, that there had been received from the invention several hundred thousand dollars, a large part of which was profit. But, as he was able to show that the value of the invention to the public reached many millions of dollars, it was deemed right to give him an extension. Many people could only see what the inventor had received, and were blind to the advantages gained by the public, and a very strong feeling of opposition to the extension of patents was developed, which resulted in 1861 in a change of the law. All patents thereafter

granted were to be for the term of seventeen years, and all extensions were prohibited.

Another important feature of the patent law introduced by the act of 1836 was the provision for the registration in the Patent Office of assignments of patents, and of grants of exclusive rights to an invention in specified territories. This change gave a security to the title to a patent similar to that given to the title to land by a registration of deeds, and served to prevent much expensive litigation.

But unquestionably the most important change introduced by the act of 1836, by the establishment of the Patent Office under the charge of a Commissioner of Patents, was the power given the Commissioner to decide whether an applicant was entitled to a patent under the provisions of the statute. In the discharge of this duty, it was incumbent upon him, on an application by an inventor for a patent, to make or cause to be made an examination of the new invention; and if on such examination it should appear to him that the invention had not before been made in this country, or that it had not been anywhere patented or described in a printed publication, and had not been in public use or on sale with the applicant's consent or allowance prior to the application, he should, if he deemed it sufficiently important and useful, issue a patent therefor. No such examination, to be made previous to the issue of a patent, had been called for by the act of 1793 or by the law of any other country. It has proved to be one of the most valuable and important features of the patent system, and in one form or another has been provided for by many, if not all, the nations which grant patents for inventions. Under the act of 1793, a patent was granted to an applicant upon his allegation that he had made an invention not known or used before. If he was mistaken in this allegation, his patent was void. But it is obvious that in most cases it would be impossible for an inventor to know, with certainty,

what had been done before; and the expense of an examination of the state of the art would be too great for most, if not all, inventors. Without such an examination, no purchaser of a patent could feel any assurance that the patent would not prove to have been anticipated. But under the act of 1836 it was made the duty of the Commissioner of Patents to do for an inventor what he could not in most cases do for himself. He was to cause an examination to be made; and upon the result of that examination the issue of the patent depended. The cost of the examination was covered by a fee of thirty dollars, which the applicant was required to pay. To provide facilities for the examinations, the act provided for the establishment of a library of scientific books, and appropriated fifteen hundred dollars for its acquisition. That library has grown to more than fifty-four thousand volumes.

It is true that the examination thus provided for was not to be conclusive, and a patent might be found to be invalid notwithstanding the examination. A defendant in a suit has a right to show, and often does show, that a patent is void for want of novelty. But, though the examination is not conclusive and binding upon other persons, it is valuable both to inventors and the public. The records of the Patent Office show that nearly one-half of the applications during the past year were rejected. Under the old practice, patents would have issued on all these rejected applications, without benefit to the inventor and to the annoyance of the public. Moreover, the provision for an examination of applications for patents has served to strengthen the presumption in favor of the validity of a patent which arises from the oath of the inventor. The strong presumption which the examination furnishes gives a value to a patent, from the moment of its issue, which it could not otherwise have, and increases the security of the investment of money in it. Very few inven-

tions can be made profitable without an outlay which cannot be justified or secured except upon a reasonable confidence in the validity of the patents which have been granted for them. The examinations of the Patent Office, though not conclusive and often not exhaustive, do furnish an assurance of the novelty of the inventions, which in most cases is of great value. The usefulness of this feature of our patent system is indicated by the fact of its adoption by other nations.

Another important duty imposed upon the Patent Office by the act of 1836 was the power to investigate the several claims of two or more inventors to the same invention, and decide which was the first inventor. Cases of this kind, known as interference cases, often arise. Provision is made for their trial similar to that made for the trial of cases in courts. They come in the first instance before an officer known as the Examiner in Interferences. Testimony is taken by the respective parties, as in equity cases; and arguments are made in behalf of the parties, as in trials before courts. An appeal lies from the judgment of the Examiner in Interferences to a Board of three Examiners in Chief, and from them in turn to the Commissioner in person. These controversies arise not only when two or more applications are before the office at the same time, but between an applicant and a party to whom a patent has been issued. The first inventor cannot be deprived of his patent by reason of a grant of a patent to another person for the same invention. The Commissioner, it is true, cannot revoke a patent improperly issued to one who was not the first inventor. He can only give a patent to one who is shown in an interference proceeding to be the first inventor, and leave it to the courts to decide the patent to a second inventor, if he attempts to enforce it, to be invalid.

The act of 1836 was followed in 1837 by another act, which introduced two important features to relieve pat-

entees from the consequences of mistakes in drawing up their specifications and claims. Under the law up to that time a patent was invalid, if it claimed more than the patentee was entitled to claim. If void as to any part, it was void altogether. The patentee was made responsible for all his patent contained. The theory was that the patent was granted upon the representations of the patentee, and that, if those representations were in fact untrue, the patent was obtained upon a false representation, and should therefore be held void. Yet it is easy to see that an applicant for a patent might honestly believe that he was the first inventor, and therefore claim something which had been before invented by another person. It was manifestly a hardship for an inventor to be held responsible for the truth of all that he believed to be true, and to compel him to forfeit what he had in fact invented, because he believed he had invented more. The act of 1837 relieved him from this hardship, and made him responsible for good faith only. It provided in its seventh section that, if a patentee through inadvertence, accident, or mistake had made his claim too broad, by claiming something of which he was not in fact the first inventor, some part, however, being justly his own, he might make disclaimer of that of which he was not the inventor, and such disclaimer should stand thereafter as part of the original specification. By the ninth section it was provided that a patent should be deemed good for all the inventor was entitled to claim, even though no disclaimer had been made, unless the patentee unreasonably failed to make proper disclaimer. These two provisions greatly increased the security and value of patent property. Their manifest purpose was to secure to an inventor all that he had really invented, unless he had forfeited by bad faith every claim to consideration.

Another most important change in the patent law was introduced by an act of 1839. Under the act of 1793, an

inventor lost his right to a patent, if the invention had been known and used by others before he made his application. To avoid the risk of having his invention put into use by some one else, and thus losing it, he was compelled to make his experiments and trials in secret. This it was often impossible for him to do. The act of 1836 had relieved him from the liability to loss from the use of the invention by others, unless it was by his own consent and allowance. He was responsible for his own acts, but not for the acts of others without his consent. But it is often very important for an inventor to subject his invention to trial under the conditions which will completely test its perfection, and expose any defects which may require to be remedied. In most cases, this can be done satisfactorily only by the actual use of the invention under normal conditions. To give an inventor the opportunity to test his invention by actual use, without the risk of losing his right to a patent, the act of 1839 provided that no use of an invention by the public, either with or without the consent of the inventor, should impair his right to a patent unless the use had been for more than two years, or upon proof of abandonment. In one respect this enlarged the rights of an inventor, in another respect it narrowed them. It gave him the privilege to permit the use of his invention or sell the right to use it without losing the right to a patent, if the use or sale had not been for more than two years; but, if he delayed his application for more than two years after the completion of the invention, it subjected him to the liability to lose his right, if the sale or use had been for more than two years, even without his knowledge or consent.

The act of 1836, with the amendments of 1837 and 1839, virtually determined the character of the patent law as it exists to-day. With the exception of the changes in 1861, already referred to, by which the term of a patent was extended from fourteen years to seventeen, and the

right to an extension abolished, no change has been made in the law which could seriously affect its influence upon inventors in stimulating them to make inventions, or upon capitalists in making investments in them. There was a general revision of the patent law in 1870, in the nature of a codification of the statutes then in force; but no substantial change was made in the rights of inventors, in the proceedings touching the issue of patents, or in the practice or jurisdiction of the courts in administering the law. In the general revision of the laws of the United States in 1875, some slight changes in the language of the act of 1870 were made, to render it more explicit in some cases; but nothing more. Practically, the law now stands as it was left in 1870.

The growth of the Patent Office and of its business since its establishment in 1836 are of the highest interest and importance. The records of the office contain the history of the inventions of the country and its advancement in the industrial arts. It would be difficult, if not wholly impossible, to point to any marked improvement in the physical arts the evidence of which will not be found in those records.

Under the act of 1836, the office consisted of the Commissioner of Patents, with a salary of three thousand dollars; a chief clerk, with a salary of seventeen hundred dollars; an examining clerk, three other clerks, one of whom was to be a competent draughtsman, a machinist, and a messenger. Eight persons made up the force of the office, and the aggregate of their salaries was eleven thousand five hundred and fifty dollars. The expenses of the office for the first full year, 1837, were $33,506.98, and the receipts $29,289.08. The number of patents issued by the office in 1836 after the date of the act establishing it (July 4) was 109; and the number for the first full year, 1837, was 436. Such was the beginning of the Patent Office. Its growth has been marvellous, and

indicates in the most striking manner the mental capacity and energy to be found among the laboring men of the country; for it cannot be disputed that the greater part of the inventions come from those who are properly called laboring men. In 1889 the force of the office consisted of the Commissioner of Patents, an Assistant Commissioner, a Chief Clerk, a Law Clerk, three Examiners in Chief, one Examiner in Interferences, thirty Examiners, and one hundred and fifty-three Assistant Examiners: the whole number of persons employed was over five hundred and sixty. The receipts of the office were $1,281,728.05, and the expenses $1,052,955.98, leaving a net surplus of $228,772.07. The number of applications for patents for inventions was 39,607; for designs, 859; for reissues, 111. The whole number of patents granted to inventors was 24,083, 22,080 to citizens and 2,003 to foreigners. In fifty-four years, the number of patents increased more than fifty-five-fold, the receipts more than forty-fold, the expenses more than thirty-two-fold, and the number of persons employed seventy-fold. The number of patents granted in forty-six years, prior to July 4, 1836, was 9,957: the number granted since that date to July 4, 1890, was 431,541.

The specifications of all patents are now printed, and copies are furnished to any one on payment of a fee not exceeding twenty-five cents. The examination of patents is thus made easy to inventors and others who may be interested in any line of invention. The office publishes a gazette of the patents issued the preceding week, containing the claims in full and the drawings in whole or in part. From the subscriptions for this publication the office received last year over thirteen thousand dollars. In connection with the business of the Patent Office there has grown up a class of men known as patent solicitors, whose business is the procuring of patents, and who may fairly be regarded as a part of the patent system. A con-

siderable number of lawyers devote themselves to patent business exclusively.

To facilitate the examination of applications, inventions are divided in the office into 188 classes, a greater or less number of which are assigned to each examiner. These classes again are divided into more than 4,000 sub-classes. Thus sewing machines, which have come into existence since the Patent Office itself was established, constitute a class divided into 42 sub-classes, the subjects of which were unknown before the advent of the sewing machine, less than fifty years ago. The examination of the list of these 188 classes and their sub-classes shows that every field of human industry is explored by the inventors of our country and subjected to their efforts to improve whatever lies within their reach. No problem is so difficult as to prevent them from attempting its solution, and none so small as to escape their observation. Nothing is so good that they will not attempt to make it better; nothing so cheap that they will not strive to make it cheaper. They are satisfied with nothing, and will let nothing rest as it is. To make improvements has become a passion which nothing will satisfy but incessant activity.

If the granting of patents is of itself the end to be secured by the patent law, we have in the foregoing figures abundant evidence to justify the existence of the law. It is safe to assert that in no other century has there been made by the whole world such a number of useful inventions as are represented by the 441,498 patents issued in this country alone in one hundred years, to July 4, 1890. But turning aside from mere numbers, and considering only the intrinsic value of inventions, their contributions to the welfare of men, their effect upon the industries and the social condition of men, we may safely challenge the world to show in any century of its history before 1790 any such number of useful inventions as it has received since that time through patents granted

by the United States. Through the patent granted to Eli Whitney, it received at the commencement of the century the cotton gin, which has probably contributed more to the comfort of man as to clothing than any single advance in the arts since spinning and weaving were invented. This was followed by the sewing machine, and this again by the vulcanization of rubber, accompanied by numerous important improvements in spinning, weaving, and knitting machinery, and in machinery for making hats, caps, and boots and shoes,— all relating to the clothing of man. Through the Patent Office, the world also obtained the steamboat, the planing machine, the machine for turning irregular forms, the Morse electric telegraph, the telephone, the reaping machine and mower, nail-making machines, screw machines, and the steam drill and steam dredge, which have increased a thousand-fold the ability of men to execute engineering enterprises. This is by no means an exhaustive list of radically new inventions, given to the world through our Patent Office, which have worked revolutions in its industries.

Are these results of the work of the Patent Office conclusive as to the value of the patent system, or do they leave open the inquiry as to its benefits to the country? There are those who assert that the patent law is no advantage to the country. It is undeniable that there has been, and doubtless still is in some parts of the country, a wide-spread hostility to the patent law. This feeling was, not many years since, very prevalent among the farmers at the West, and may still be so, though they are a class to whom the inventions of recent years have been of incalculable value. It may have been entertained and stimulated by the railroad companies, which have found it inconvenient to dispense with or pay for patented inventions. The writer was assured several years ago, by a member of Congress from Massachusetts, that a large number of the members of the House of Representatives

were ready at any moment to vote for the repeal of the patent law. At every session of Congress bills are introduced, providing, if not for the repeal of the law, at least for its amendment in such a way as to destroy or impair the value of patent property.

Curiously enough, this hostility to the patent law is often excited by inventions of the greatest value. A striking instance of this was presented in the history of the driven well. That it was a valuable invention is proved by the wide extent of its use. In many parts of the country, the difficulty and cost of digging wells were so great that, when it became known, its adoption by multitudes was certain. It was cheap and effective. It was so simple that to most persons it did not seem to involve invention. It consisted of an iron tube provided with a solid point and with holes at the bottom of the tube for the entrance of water. This tube was driven into the ground till it reached water; and, with a pump attached to the upper end in the usual way, water could be sucked out of the ground. Multitudes of farmers bought these instruments, and used them without knowledge of the existence of a patent. The patent became the property of a company which sought to enforce it. Its validity was contested on various grounds, but unsuccessfully at first. Armed with the decisions of the courts in its favor, the company sought to enforce its rights against the numerous users in various parts of the country by collecting damages or obtaining injunctions. But the number of infringers was so great, and they were so widely spread over certain parts of the country, that it was difficult to reach them. Unfortunately, the company adopted the policy of farming out the collection of damages to local agents in the regions of infringements, who were to receive a commission on the amounts collected. These agents hunted up the infringers and issued notices to them to pay a sum fixed as a royalty (which does not

appear to have been exorbitant), accompanied with a threat that, if this was not done at once, the amount charged would be largely increased, and that a suit would be commenced to enforce the payment and to obtain an injunction. Large amounts are said to have been collected in this way. It was easier for a farmer to pay the sum demanded than to contest a suit, or even to consult counsel as to a defence. Nevertheless, he was made excessively angry; and, if he was surrounded by neighbors in the same situation, they easily brought themselves into a state of excitement which manifested itself in denunciations of the patent law to their representative in Congress, in the resolutions of political conventions, and in demands for its repeal. No thought was given to the fact that, even after paying the sum demanded, the infringer had obtained an efficient well at a trifling cost as compared with the cost of digging one in the old way.

A dramatic element of the history of the driven-well patent is that, after it had expired, it was declared invalid by the Supreme Court. All the money exacted under it from the users of driven-wells was illegally exacted. It may well be imagined that this final condemnation of the patent after it had expired was not calculated to dissipate the hostility of the Western farmers. The ground on which it was declared invalid was that the invention had been in public use more than two years before the inventor made his application for a patent. This fact did not appear in the earlier cases, and was not known to the Patent Office while the application was pending. But, if the fact had been known, the patent would undoubtedly have been issued by the Patent Office, and would have been sustained by the Circuit Courts; for the decision of the Supreme Court was based upon a construction of the statute of 1839, above referred to, different from that which had been given to it by the Circuit Courts and by patent lawyers generally of the country.

Other illustrations might be given of the hostility which is aroused against the patent law by attempts to enforce it. The determined hostility of the Southern planters to the enforcement of Whitney's rights under his patent for the cotton gin is a matter of history. The most common change which this feeling of the opponents of the patent law causes them to ask of Congress is the so-called innocent purchaser provision. It is proposed that any person who buys a patented article in the open market, without knowledge of the fact that it is patented, shall not be held liable as an infringer. It is easy to see that the purchaser of any article would take good care not to know that it was the subject of a patent. He would at least convince himself that the patent was invalid. In many other indirect ways, attempts are frequently made to impair the efficiency of the patent law. The writer is not aware that a bill has ever been introduced in Congress for its direct repeal.

One of the objections not infrequently made to a patent law, sometimes undoubtedly in good faith, is that it does not in fact stimulate inventions; that they are made because inventors are impelled by a spirit of invention which they can no more resist than they can resist the demands of hunger, and that it is therefore unwise and unjust to pay a bonus for their labors. It is said that the inventions which have been made under the stimulus of the patent law, or others as good, would have been made without it. It is obviously impossible to demonstrate absolutely the truth or the falsity of such an assertion. Multitudes of inventions were made by men before the world knew of a patent law. Patents for inventions are themselves a modern invention. They owe their origin to the English statute of monopolies passed in 1622. Many great inventions, which may even be called modern, were made before that time. The art of printing is a notable instance. The invention of gunpowder and fire-arms was not due to a pat-

ent law, nor the invention of the mariner's compass, nor the telescope. Even now the highest efforts of the human mind are directed to scientific discovery without thought of pecuniary reward. Upon what ground, then, can it be asserted that the patent law of this country has justified its existence; that it has fulfilled its mission "to promote the progress of science and useful arts"?

In the first place, it is an important fact that the inventors who have taken patents in the United States form such a host. This alone raises a presumption that they have not been indifferent to the hope of gain from their inventions. They have at least acted as though their inventions were made for the purpose of securing patents, and profits from them. In no other country has it been so easy and inexpensive for inventors to obtain patents for inventions, and in no other country have so many patents been granted annually or in the aggregate. England has had her patent law nearly three hundred years, and under it patents have been granted for some of the most important inventions the world has ever seen. This country, starting in 1790 with a population of less than four millions and with limited manufactures, has outstripped her in one hundred years. In England the cost of procuring patents has been high. In this country it has been low. The low cost of procuring patents in this country has placed them within the reach of thousands who could not have availed themselves of the right if the expense had been that of obtaining patents in England.

It is interesting to observe that this country was the first to follow the example of England in securing to inventors the exclusive right to their inventions. France followed a year later, and Germany in 1815. Since then the wisdom of securing to inventors a return for their labor has been so generally recognized that now nearly every civilized country, if not every one, has a patent law. The two thousand and three patents granted last year by

the Patent Office to foreign inventors were distributed among thirty-seven countries. The legislation of many of these countries has been based upon or copied from the law of this country. It is fair to conclude that the recognition of the value of the patent law to this country has had its influence in leading other countries to the belief that it was wise to invest inventors with a right to their inventions.

Next, we may note another interesting and important fact, which bears upon the question whether patent laws stimulate invention. The three countries which in this age of invention have contributed the greatest number of radically new and highly valuable inventions are the three countries which have longest secured to its inventors a right to their inventions,— England, the United States, and France.

But the agency of the patent law in promoting progress in the useful arts is not limited to its influence upon the inventor. It reaches the capitalist, who is generally as necessary to the introduction of an invention as the inventor himself. He has no motive to interest himself in a new invention but the hope of gain. He has no sentiment to gratify such as may inspire an inventor to surmount obstacles and achieve triumphs. Success with him is the credit side of profit and loss. But, with most important inventions, the investment and risking of capital in securing their introduction among the useful arts are indispensable. The share of Boulton, the partner of Watt, in the improvement and introduction of the steam-engine, was hardly less than that of Watt himself. Without his business experience and sagacity, as well as his capital, the world might have waited long for the results of Watt's genius. But it is matter of history that, after Boulton had become fully convinced of the great value of what had been done by Watt, he refused to devote himself and his capital to the introduction of the steam-engine until Watt,

whose patent had nearly expired during his fruitless efforts to secure aid, had secured from Parliament an extension of the patent. This episode in the history of the steam-engine illustrates a very important point in the effects of a patent law on the introduction of inventions and the progress of the useful arts. The introduction of new inventions is generally, if not always, attended with such expense and trouble and risk that few persons will attempt it unless they can be protected, after success is secured, from the competition of those who have had no part of that expense. It is only by giving to new inventions the status of property, the possession of which can be assured by law, that they can be bought and sold like other property; and, if they cannot be bought and sold, inventors can seldom or never find a recompense for what they have done. It is only through the patent law that inventions at the commencement of their history can usually acquire a marketable value; and, unless they can acquire such a value, they will seldom be called into existence. The testimony of all the leading inventors who have contributed to the material progress of the age, whenever it has been given, is uniformly that their inventions would never have been made but for the hope of profit under the patent law; but the evidence is even more abundant that the aid of capital and business skill for the immediate development of inventions can be secured only under the protection of the patent law.

It needs no proof that the inventions which have been made in this country have contributed greatly to the increase of its wealth, though it would be wholly impossible to estimate what share in the increase should be credited to them. But the accumulation of wealth is not the sole object of society, and there are those who contend that the increase of wealth during the past century has been attended with a relatively greater increase of poverty. They contend, and probably believe, that the net result of

the introduction of modern improvements in the industrial arts has been to injure society and not to improve it, and that the great mass of men have not been made happier and better by them.

A humble example will show whether it is the inventor or the public that receives the greatest benefit from an invention. Many persons not yet old will remember when the weekly washing of the clothing of the families of the country involved as its most laborious part the wringing of the garments by hand. Some person invented the wringing machine, in which the garments were passed between elastic rolls by turning a crank. The invention went into general use, and the patent proved a profitable one. Now, if the wives of the laboring men of this country were asked to name a price at which they would give up the use of this humble implement, can any one suppose that they would agree to do it for a hundred times the profit derived from the patent by the owners? There is not a house in the land the daily labor of which is not lighter than it would otherwise be by reason of inventions which are never thought of by those who entertain most positively the opinion that the great mass of the people have gained nothing from the inventions of this century. The truth is directly the reverse. No invention can yield a fortune to those who bring it into use unless directly or indirectly it ministers to the well-being of a multitude of men; and no multitude of men will adopt an invention unless they can see that they will in some way be the gainers thereby. The universal wants of men are food, clothing, shelter, and fuel. As to the necessity of supplying them, there is no difference between the rich and the poor; and it is to the supply of these common wants that the labors of inventors have been most persistently directed. There are many inventions the direct and immediate purpose of which is to enable those who perform physical labor to satisfy their daily wants with less exer-

tion and fatigue than by old methods or instruments, or with less exposure to hurtful conditions and surroundings. The reaping and mowing machines, the improved ploughs and harrows, the seed-planting and sowing machines, the sewing machines and improved kitchen utensils, the stoves and furnaces, the waterproof rubber coats and boots, do this for the farmer and his family, the greater part of whose labor is expended on that which he raises for his own consumption.

Remarkable results have been achieved in the satisfaction of other than physical wants. The general education of the people and the diffusion of knowledge have made their demand upon inventors, and they have met it with signal success. To educate those whose daily toil must through life supply their daily wants, books are required as much as for the education of the rich. It is not highly important to the latter that books should be cheap, but is well-nigh indispensable to the former; and the highest efforts of mechanical genius have been directed to satisfying this requirement. There is no part of a book as it is now made which has not been subjected to the inventors' efforts to cheapen it. Less than a hundred years ago paper was made wholly or almost wholly from rags. The production of rags has long been inadequate to supply the demand, and the world has been searched for new materials. New methods, chemical and mechanical, have been devised for reducing various kinds of grasses and other kinds of fibrous substances to pulp. Trees themselves have been attacked as a source of supply, until the forests of the New England mountains are threatened with annihilation to meet the demands of book-makers for cheap paper. One improvement after another is yearly made in paper-making machinery, and constant improvements are made in the printing machine. All this brings books within the reach of every child to be educated and every man who can read, whether rich or poor. Does any one

imagine that the resources of mechanical skill and genius would be taxed to their utmost, and that millions of dollars would be expended to bring the price of daily papers down to two cents, unless there were a multitude of customers such as the rich could never furnish?

A sanitary improvement may be invented and patented, but it can give no wealth to the owner of the patent unless it be adopted by a multitude of people whose comfort and health are increased by it, and who would not adopt it if it did not do this for them. A few years ago the city of Memphis was subjected to the ravages of yellow fever, due in great measure to its want of proper drainage. The city was aroused by the calamity to a sense of its danger, and introduced an improved system of drainage, unknown a few years before, with the result that it has become one of the healthiest cities of the country. Who have been the greatest gainers from the invention of improvements in sewerage,— the inventors or the communities which have adopted them?

Through inventions such as these, called into existence by the stimulus of the patent law, the moral and intellectual wants of the great mass of men, as well as their physical wants, are supplied as never before, and means for improvement and sources of enjoyment are open to them which otherwise would be the exclusive privilege of the rich. We have but to look at the railroad, the product of a multitude of inventors, which, taken as a whole and in view of its influence upon the conditions of society, is perhaps entitled to rank as the greatest of human inventions, to see that what it does for the rich it does in greater measure relatively for the poor. It transports in this country alone millions of people who work for daily wages, and who but for its existence could never find the money or time to travel. It transports food and clothing over distances which would have shut out both from cheap sources of supply. This is the most striking illustration

of the effect of inventions in supplying the wants of men in all conditions of life at the cheapest rates, and bringing the means of comfort and enjoyment within the reach of constantly increasing numbers. They give to a constantly increasing proportion of men the substantial advantages of wealth by placing within their reach, upon terms with which they can comply, a constantly increasing proportion of those things which heretofore wealth only could command. They have done and are still doing much more than this. A long list could be made up from the records of the Patent Office of things called into existence by inventors and contributing daily to the comfort, well-being, and happiness of rich and poor alike, which no long time ago could not be secured by any one upon any terms.

These are but meagre illustrations of the manner in which inventions promote the welfare of the people at large, but they serve to indicate the conclusion which would be inevitably reached by an exhaustive examination of the histories of the patented inventions of this country. It is true that such a history would show that a great number of the inventions for which patents have been issued have proved to be worthless. If worthless, they are also harmless. Repeated failures in the effort to advance are inevitable. The great highway of human progress is strewn with wrecks of repeated trials in the effort to secure substantial results. The failures are by no means a total loss. They often disclose the conditions of success or indicate the direction in which it lies. It is often as important to know what cannot be done, and why not, as to know what can be done. The patent law has had the effect of stimulating a spirit of inquiry into the secrets of nature, which is as truly scientific in its methods and objects as any intellectual work which the world has ever known. Not the least of the benefits of the patent law to the country is the body of trained

observers and experimenters which it has called into existence among the laboring men of the country.

This article cannot be better brought to a close than by an extract from the annual report made at the beginning of this year by the present accomplished Commissioner of Patents: —

> The place of the Patent Office among governmental agencies is as unique as it is important. It is concerned neither with the collection nor the expenditure of the ordinary public revenues. Unobtrusive and unsensational in its work and methods, it asks nothing of the Treasury excepting moneys which its patrons contribute, and nothing of Congress excepting measures to secure its highest efficiency. As it enters upon the second century of the system which it administers, the distrust which has existed to some extent of its functions has happily passed away. The triumphs of American invention have attracted universal admiration, and the conspicuous demonstration of their importance and usefulness has turned distrust to confidence. I verily believe that no law or legal system in any age or any land has ever wrought so much wealth, furnished so much labor for human hands, or bestowed so much material blessing in every way as the American patent system.

The justice of this estimate of the value of the patent system of this country will not be doubted by those who study its workings most carefully. Such students will find its greatest results not in the achievements which strike the imagination most forcibly or have left their record in great fortunes, but in the multitude of minor inventions which have invaded every household, farm, and workshop, making labor lighter and more efficient, increasing the comforts of life, and bringing into the humblest homes a multitude of things contributing to health and happiness which not many years ago would have been ranked among the luxuries of the rich or were wholly beyond the reach of rich and poor alike.

CHAUNCEY SMITH.

THE SOUTHERN RAILWAY & STEAMSHIP ASSOCIATION.*

About the year 1860, after the railroads from the East had been pushed through to Chicago, and the short independent roads began to be united in interest and in management, the sharp competition that has become such a marked feature in modern railroad operations first came into prominent notice. Up to that time, each road had used only its own cars, the freight and passengers being transferred at the terminus. As it became necessary for connecting roads to work together, and make through lines requiring no transfers, each road began to work for the whole line of which it formed a part as against other similar lines or combinations.

The development in the South was much slower; and combination and competition, though inevitable, came more tardily. It was not till the Southern country had been laid waste by the contending armies, and its business brought to a standstill, that really sharp competition became the rule. Then the country was found to be supplied with more roads than were needed. According to Mr. Powers, afterwards Commissioner of the Southern Railway & Steamship Association, "there was not as much business as all could do. Indeed, any one of these lines, with a comparatively small output for rolling stock, can do all the business to any, indeed to all, competitive points named in our circulars." † With such a condition of affairs, it was inevitable that each road should try to get all the business possible. This was

*This paper was originally prepared as a thesis in one of the courses in political economy in Harvard University. It has been somewhat revised for publication in the present shape. The main source of information has been in the printed volumes of *Circular Letters of the Southern Railway & Steamship Association*, hereafter referred to simply as *Circular Letters*. In the references to them, the number preceding the title indicates the volume.

In the Appendix is printed the text of the agreement on which the Association rests, as it stood immediately before and after the passage of the Interstate Commerce Act of 1887.

†3 *Circular Letters*, 901.

done by means of rebates or open cutting of rates, which soon brought them to a ruinously low range. At this stage of events, agreements to restore and maintain rates were not infrequently made; but, as Mr. Fink subsequently remarked in one of his reports to the Association, these agreements were generally made by the managers "with the purpose merely of practising deception upon each other. Starting from a higher scale of rates, they secured, for a short period at least, some remuneration for the work performed, until the low rates were reached again."* Mr. Fink estimated that by means of these rate wars the gross earnings of the Southern railroads were reduced about forty-two per cent. below what regular rates would have yielded.† This forty-two per cent. was in many cases equal to the whole net earnings which could have been derived from the competitive business at the regular rates, showing that the business was really unprofitable. The roads in the South were, in consequence, practically worthless to their owners. The following language was used in 1876 by a committee of the stockholders of the Central Railroad & Banking Company of Georgia: "It is conceded that the property of your stockholders is on the brink of being sunk forever; and the bankruptcy of a number of your roads is imminent, if not even now a fact."‡ This was the condition of affairs which led to the formation of the Southern Railway & Steamship Association.

Several isolated attempts were made to bring about a division of business before the final comprehensive scheme was adopted. Thus, in 1873, the roads running out of Atlanta, the Central, the Georgia, the Western & Atlantic, and the Atlanta & Charlotte Air Line, agreed upon divisions of the cotton business.§ The accounts were kept by the superintendent of the Western & Atlantic, and were settled after some delay and dispute. This agreement covered only the cotton season of 1873.

On December 21, 1874, a meeting of the Southern roads was held at Macon, Georgia, to devise some permanent means

* 1 *Circular Letters*, 277. † 1 *Ibid.*, 278. ‡ 2 *Ibid.*, 338.

§ 22 *Ibid.*, 1619 (Report of the General Commissioner).

of settling the difficulties that were constantly arising between them. Adjourned meetings were held in January, 1875, when an agreement was drawn up and a provisional division of business agreed upon for the principal competitive points. Several meetings for perfecting the agreement were held during 1875; and on October 13 of that year Mr. Albert Fink was elected General Commissioner.* This was in itself a favorable omen for the experiment; for Mr. Fink had been General Superintendent of the Louisville & Nashville Road, and was familiar with the railroad business of the South. Furthermore, it was largely on a plan laid down by him in a letter to the president of the convention that the Association was formed. He accepted office only for the purpose of organizing the pool and setting it in motion, and served but six months. Notwithstanding his short term of office, it is to Mr. Fink that the Association owes much of its success. The Southern Association was his first experiment in arranging railroad pools and agreements, and was, in fact, with one exception, the first practical pooling arrangement in this country.†

The Association, as its name implies, was intended to include all of the Southern transportation companies. Any road south of the Ohio and Potomac Rivers and east of the Mississippi could become a member. Any steamship company connecting these roads with Boston, Providence, New York, Philadelphia, or Baltimore was eligible. Its main object was to remedy the evil of excessive competition, which was working the destruction of all Southern roads, by maintaining rates and securing a fair distribution of business. To accomplish these ends, an annual convention was held, to which each road sent a representative. This convention elected the President, a permanent General Commissioner, a Secretary and Auditor, a Board of Arbitration, and an Executive Committee. It voted on the admission of new members, and adjusted all matters that could not be determined by the General Commissioner, a two-thirds vote being necessary for any action.

* 1 *Circular Letters*, 18.

† The exception was the so-called "Omaha Pool," first formed in 1870 between the Burlington, Rock Island, and North-Western Roads.

The Commissioner had general charge of the business of the Association, but referred to the convention, or to the managers of the roads interested, whatever delicate matters he did not feel able himself to deal with. His decisions, orders, recommendations, statistics, together with the minutes of the conventions and committee meetings, were communicated to the various roads by means of circular letters. These have been collected, and the twenty-four volumes in which they are preserved form the chief source of information regarding the history of the Association.

The practice of referring details to the convention, adopted in the first agreement, proved cumbersome and impracticable. Accordingly, there were occasional informal meetings of the various managers; and in 1883 * an Executive Committee was appointed, consisting of the manager or executive officer of each of the principal lines in the Association. This Executive Committee was given jurisdiction over all matters relating to the joint traffic, but could act only by unanimous consent. It could delegate to sub-committees jurisdiction over matters especially committed to their charge. Such a sub-committee was the Rate Committee; though a Rate Committee, with powers derived from a different source (the convention), had existed for several years before this. Having charge, in the first instance at least, of rates and classifications, this sub-committee became one of the most important branches of the organization. It consisted of the general freight agents of each of the lines in the Association. The Rate Committee, like the Executive Committee, could act only by a unanimous vote; and any member could demand that a question be referred to the Executive Committee.† This condition of a unanimous vote was probably meant to prevent any combination or clique of lines from bettering themselves at the expense of the others. But the result, as might be expected, was that it was often impossible to reach a decision, even on comparatively unimportant matters. The question would then go to the Executive Committee, where a similar state of affairs was likely to be met, and finally to the Board of Arbitration. This in-

* 22 *Circular Letters*, 352. † See the Agreement, Articles 7 and 10.

volved much time and expense, even in cases where a majority vote in either committee should have been amply sufficient. But it may be said, on the other side, that by this reference of the matter to arbitration the dissenting roads were sure of an entirely impartial decision, and would be much more likely to abide by it than when outvoted in the committees.

By the first agreement (1875),* provision was made for reference of any disputes that might arise to the Commissioner as arbitrator. Then, if any member disapproved of his decision, the matter was referred to outsiders selected by the contestants in the case. In one case, Mr. Charles Francis Adams was so chosen as referee.† But this scheme of bringing in strangers, busy with affairs of their own, was not always practicable. Accordingly, some years later, an Arbitrator was elected as a permanent officer of the Association. His duty was to receive written arguments, and, in connection with the Commissioner, to decide all cases that might be referred to him. At the ninth annual convention,‡ October 24, 1883, the number of the Arbitrators was increased to three, the present number.

As soon as possible after the completion of the organization and the election of the Commissioner, a permanent division of business was agreed upon for Atlanta, Augusta, and Macon. This was put into effect on November 19, 1875. Each road was expected to carry, as nearly as possible, the appointed amount. In case the exact proportions could not be secured, one-half a cent per ton per mile was allowed each road for any excess carried by it, to cover the expense of carriage; and the remainder of the revenue was paid to the Commissioner to be transferred to the credit of those roads carrying less than their proportions.§ Daily returns of the competitive business were made to the Commissioner, whose duty it was to publish monthly tables of the amount of freight carried by each road.

This would have done very well if all the roads had honestly performed their part. But such was not the case.

*1 *Circular Letters*, 7. †14 *Ibid.*, 35. ‡14 *Ibid.*, 45.

§This was changed later. Twenty per cent. of the revenue was allowed in the last years of the pooling arrangement.

Down to July 31, 1876, when Mr. Virgil Powers took the place of Mr. Fink, only 62½ per cent. of the merchandise balances had been settled.* The remaining 37½ per cent., and all the balances on cotton, still remained unpaid. A compromise was arranged for the remainder, and the amount agreed upon was at last nearly all paid. But, as the same trouble was likely to recur, the Commissioner proposed that each road should deposit to his order a certain percentage of the revenue on each way-bill of pooled business. In June, 1877, a convention of the roads agreed to a deposit of twenty per cent.† In 1887, in his annual report,‡ the Commissioner was able to say that "since 1877 all balances have been paid and rates thoroughly maintained, except for about a month from February 14 to March 15, 1878, during which time there was a war of rates between the roads."

At the outset, the pool covered only the business with the Eastern cities. The Western business was not pooled till the year before the Interstate Commerce Act was passed. On this unpooled business, rates were being constantly cut, and there was much complaint both by the roads and by the public. To remedy this evil, another organization of Southern roads was formed in 1886, known as the "Associated Roads of Kentucky, Alabama, and Tennessee,"§ and the pooling arrangement, which had operated so successfully with the Eastern business, was extended to the business to and from the West. In 1887, the new organization was united with the Southern Railway & Steamship Association; and the Commissioner of the former Association, Mr. J. R. Ogden, was elected Vice-Commissioner of the latter and given charge of the Western business.‖

One further point in the history of the organization needs to be spoken of before we turn to its practical workings. The agreement contemplated putting both passenger and freight business under the rules of the Association. At first, however,

* 21 *Circular Letters*, 1679. † 3 *ibid.*, 861.

‡ 21 *ibid.*, 1620. § 21 *ibid.*, 1620.

‖ 22 *ibid.*, 138, 1621. At the end of the year, however, this office of Vice-Commissioner was abolished.

freight traffic alone was regulated. In 1885 the Commissioner was asked to submit a plan for bringing the passenger business under the control of the Association, and in November a plan was submitted to the Executive Committee.* It was never acted on by the Association as such; but it was taken in hand by the roads, and another Association was formed, called the Southern Passenger Association. It is distinct more in name than in practice. The two Associations are composed of the same roads, and the same person is their General Commissioner. The Southern Passenger Association is now practically a part of the Southern Railway & Steamship Association.

So much for the history and general organization of the Association. The Commissioner, the Executive and Rate Committees, and the Arbitrators are the effective parts of the machinery; and to their functions and the modes of exercising them we will now turn.

The General Commissioner has always been the executive officer of the Association. His duty was primarily to carry out all laws passed by the convention or the committees. But it went beyond this. He had a conditional legislative power. By written authority he was actually made a special agent of each of the roads, and was supposed to look after the interests of all alike. One of his most important duties was, in connection with the Auditor, to collect and publish accounts of the business transacted, and statistics on any other matters that would be of assistance to the roads. As an example of this function, we may mention certain tables in regard to the capacity of the different Tank Line cars for the transportation of oils. It had often been impossible to ascertain the exact weight of shipments of oil; and it was arranged that in future the capacity of the cars, as given in these tables, should be taken as the basis in calculating the charges.†

The Commissioner and Auditor were to keep accounts of the business done. To enable them to do this, the agents of the initial roads were ordered to forward daily to the Commis-

*17 *Circular Letters*, 1622; 18 *ibid.*, 193.

†20 *ibid.*, 107; and 22 *ibid.*, 391.

sioner copies of all way-bills of through business.* At the same time, they were to deposit in bank to the order of the Commissioner twenty per cent. of the revenue from such business. The accounts, which were to be made out and published monthly, were divided into nine tables. Table A showed the movements of merchandise during the month from each Eastern city to all division points; the route, amount performed in pounds and revenue, allowance for carriage and net revenue to be divided, percentages and revenue allotment, excess in the amount carried, and the cash deposited to the order of the Commissioner.† Table B gave similar information for the two months previous, enabling a manager to tell whether his road was gaining or falling behind the other lines. Tables C and D gave similar information about the cotton business. E and

*See the Agreement, Article 18.

†By way of illustration, I give the Commissioner's Table A for October, 1882, on New York traffic:—

NEW YORK TO ATHENS, GA. Name of Road and Route.	Gross Pounds.	Gross Revenue.	Allowance for Transportation.	Net Revenue Divided. Debit.	Per cent. agreed on for Each Line.	Net Revenue Allotted. Credit.	Revenue in Excess. Net Debit.	Revenue in Deficit. Net Credit.	General Com'r's Deposit, 20%.
N. E. R.R. via Pied. A. L., .	149,687	$1,045.85	$209.17	$836.68	57.5%	$1,029.69	. .	$193.01	$201.55
Ga. R.R. via Savannah, .	18,800	181.85	36.37	145.48	17.	304.43	. .	158.95	34.18
Ga. R.R. via Charleston, .	149,332	971.94	194.39	777.55	17.	304.43	$473.12	. .	194.12
Ga. R.R. via A. C. L., . .	2,205	22.11	4.42	17.69	5.1	91.33	. .	73.64	4.42
Ga. R.R. via Port Royal, .	2,280	16.70	3.34	13.36	3.4	60.88	. .	47.52	3.34
Totals, . .	322,304	$2,238.45	$447.69	$1,790.76	100 %	$1,790.76	$473.12	$473.12	$437.62

To keep these various accounts, of course a larger force of clerks was necessary, entailing a considerable expense. This expense was met, first, by a yearly membership fee of $300 for each road, and, second, by assessments on the various roads in proportion to their revenue from competitive business. For the year ending May 31, 1889, the expenses of the Association were a little more than $51,000.

F showed the gross revenue and balances for the month at each point and at all points combined, for merchandise and cotton respectively. G gave the gross revenue and balances for merchandise and cotton combined, at all points, and the cash deposited for the month. This is the table upon which the settlements were made. H gave the gross revenue from merchandise and cotton, and the two combined, for the two months previous. I gave the amount of the Commissioner's deposits, where deposited, the character of the business on which deposit was made, and by whom it was made. In 1883 another set of tables was added, showing the movements of cotton factory goods. By means of these various tables, the manager of each road was enabled to see at a glance just what business there was to compete for, and what share his road was getting. They showed him, also, the basis on which the percentages of division were calculated.

Having informed the roads by means of these tables of the amount of their indebtedness, and of the business from which it arose, the Commissioner and Auditor acted as clearing-house agents for the settlement of the accounts. The twenty per cent. deposit of the debtor companies was applied as far as possible to paying their balances, and sight drafts were drawn by the Commissioner for any excess. The deposits were relied on, however, to pay the greater part of the indebtedness. In September, 1884,—to take a month at random,—out of the sixty lines (routes) for which accounts were kept, twenty-one had carried more than their share of freight. Out of these twenty-one, ten had deposits large enough to cover all indebtedness. With five more, the excess was less than $100; while only six of the twenty-one owed more than $100 in addition to what their deposits would cover. The deposit practically assured a prompt settlement of all balances. Whatever remained of the twenty per cent. after paying the debts was returned monthly to the depositing companies.

The Commissioner's accounts and statements obviously could not be accepted as conclusive unless the right was given him to examine the books of any member of the Association,

as a safeguard against fraudulent or irregular reports. This right was given by Article 18 of the Agreement. Some instances of the mode in which it was enforced will serve to illustrate the practical working of the Association. In the fall of 1886, one of the Inspectors, at the order of the Auditor, attempted to examine the books of the Alabama Great Southern Road at Chattanooga, in order to trace some cotton shipped from Atlanta. The officials of the road refused to allow this examination; and the matter was brought up in the Executive Committee. A vote of censure on the road was there passed, and the action of the Alabama Great Southern in this case was treated by the committee simply as a breach of the agreement.* In 1883, however, the power was more vigorously exercised. It had been charged that rebates were being paid on compressed cotton via the Atlantic ports; and the Commissioner was instructed by the Executive Committee to examine the books of the railroad companies and the steamship companies carrying to and from these ports, for the purpose of ascertaining whether such rebates had been paid.† Another case, even more striking, came up in July, 1885.‡ The matter of rates and rebilling from the West was under discussion. The Rate Committee requested the Commissioner to examine the rebilling records of the Nashville, Chattanooga & St. Louis Railroad, and to report the extent of such business, making a separate statement of each class of freight rebilled, under what divisions and to what points; and also a statement of the quantity of similar business shipped at Nashville rates. The examination was made, and a report of fifteen or more printed pages presented a few weeks later.§

We turn now to another important part of the Commis-

*20 *Circular Letters*, 121. †14 *Ibid.*, 213. ‡17 *Ibid.*, 1625.

§18 *Ibid.*, 364. Other statistics were collected by the Commissioner. Among them were some that must have been gathered in any case; but the matter was much simplified when one man gathered the information for all the roads. Such, for example, were the tables of the "arbitraries" charged by the Northern roads. The Southern Association made rates to New York, Providence, Boston, and other cities. To find the rates on cotton (the chief North-bound business) to the interior New England manufacturing town, the arbitraries given in these tables were added to the regular Boston rates, and gave a desirable uniformity in the rates.

sioner's functions. The object of the Association was primarily to maintain rates. Theoretically, this was done; but in practice there were many irregularities. Goods were often classified wrongly or were underweighed. Shippers often misrepresent the goods when the railroad agents are unable to ascertain for themselves their quality and class. Often the agents are wilfully negligent; by not being too watchful in classifying and weighing, they cut rates and draw the traffic to their lines. To remedy this evil, in 1886 (July 16) the Commissioner was empowered * to appoint two Inspectors of Weights and Classifications. The same experiment had been tried by the South-western Association, and some others, and had proved very successful.† The need that had existed for some such check is shown by the following table of the work accomplished by the Inspectors in the first year after they were appointed: ‡ —

	Number of Shipments corrected.	*Weight corrected.*	*Increase in Revenue.*
Oct. 1, 1886, to June 1, 1887,	10,173	11,992,037	$32,057.35
One month, May, 1887,	1,829	1,649,348	5,112.21

This of itself shows a substantial increase in revenue. But the effect of the new method was much greater than the figures of corrections would indicate. "The knowledge that checks have been provided makes shippers more careful than they would be otherwise. Hence attempts to evade the classification are not so numerous as they formerly were, or as they would be, did not the shippers know that we were watching to prevent irregularities." § Whenever the Commissioner suspected that fraudulent practices were being followed, he would send an Inspector to examine and, if possible, stop them. The Inspectors were also sent to examine the books of a company, if it was suspected that business was done without being reported. In 1886, the East Tennessee, Virginia & Georgia

* 19 *Circular Letters*, 1717. The number of Inspectors has since been increased.

† 19 *Ibid.*, 1689. ‡ 21 *Ibid.*, 1627.

§ Letter from J. W. Midgeley, Commissioner of the South-western Association, to Mr. Powers, in 19 *Ibid.*, 1690.

road was charged with failing to report all the cotton carried to Brunswick. An Inspector examined the books of the company, and watched the shipments for some time, in this case without bringing to light any irregularity.

In the early part of this paper, it was said that the Commissioner, in addition to his executive powers, had a limited legislative power. This was in the matter of rates. The first step in this direction was taken in 1876* (before the existence of the Rate and Executive Committees), when the annual convention of the Association adopted the rule "that the General Commissioner shall regulate the division of the cotton business, including past operations, by requiring companies in excess at any point to advance rates sufficiently to allow the business to go over the lines which are short of their agreed proportion." Another grant of legislative powers was made to the Commissioner in February, 1888,† when the Executive Committee authorized and instructed the Commissioner to make such reductions as were necessary to meet the competition of the Savannah River boats. This was not acted upon by the Commissioner; for on March 15 the Rate Committee itself, in order to meet the competition, reduced the rates in question. But it was not so much the exercise of the power as the fact that at times the Commissioner had the power to change rates, which is to be noted. The power is not general: it is only given in special cases, and, as a rule, for a limited time. The Commissioner issues the rate circulars and gives notice as to when they shall go into effect; and in practice it is to him that all look for authoritative statements in the matter of rates.

The second important part of the machinery of the Association consists of the Executive Committee and the Rate Committee, whose formation and powers have already been described. We may now examine some particular cases illustrative of these powers. It will be most convenient to describe them irrespective of whether they came up in the Rate Committee or Executive Committee. The reader will remember that the Executive Committee is the higher court, as it

*2 *Circular Letters*, 390. †22 *Ibid.*, 232.

were, and that any matter can be appealed to it from the Rate Committee.

Of course, the first duty of the Rate Committee is to make rates to and from the competitive points. This statement seems simple, but it involves more than appears at the first glance. It brings up the questions of (1) division of the business on which rates have been made; (2) differentials between different towns; (3) classification of goods.

A fixed rate having been agreed upon for the competitive business, a division of the business follows almost of necessity. There are always differences in the position or equipment of the competing roads. The best equipped and most convenient road would naturally get most of the business. This would ordinarily lead to a cutting of rates, and that, too, as is usual in such cases, by the road least able to give low rates. The only way to prevent a continual struggle is to assure the weaker road a certain proportion of the business. In the early days of the Association, divisions were agreed upon by the managers of the roads for eight points,— Atlanta, Augusta, Macon, Newnan, West Point, Opelika, Montgomery, and Selma. These divisions were based on the normal carrying capacity of the roads, as shown in the business of the years past. For example, the divisions for Atlanta were: * —

	Cotton.	*Merchandise.*
Central R.R., ...	31.7%	26¼%
Georgia R.R., ...	31.7	40
Atlantic & Richmond Air Line R.R., . . .	15.8	16¾
Western & Atlantic R.R., ...	15.8	16¾
Atlanta & West Point R.R., ...	5.	....

As new roads were built, new allotments of business were demanded or allotments at new places. In 1886, the merchandise business of 15 places was pooled; and at Atlanta the number of pooled routes had grown from 5 to 12.

Again, some of the old lines, by offering greater facilities, might feel able to demand a larger proportion of the business. There was an important case of this sort in 1884, on the Montgomery cotton business. From January, 1881, to August,

*1 *Circular Letters*, 1.

1883, the business had been pooled on the following percentages: * —

East Tennessee, Virginia & Georgia, via Calera, ...	14%
Louisville & Nashville, via Mobile, and North, via Louisville & Nashville, ...	48
Montgomery & Eufaula and Western of Alabama, ...	38

In 1883, the East Tennessee became dissatisfied with this division, and refused to renew the agreement, asserting that, to avoid paying the heavy penalty of $1.50 per bale for excess carried, they had been compelled to turn over to their competitors several thousand bales of cotton. In 1883–84, the cotton business from the point in question was not pooled, and the East Tennessee Road carried over twenty-seven per cent. of the business, even though full Association rates had been charged. The next year, the matter came up in the Executive Committee, where an attempt was made to settle it. This failing, it went to the Arbitrators for a decision. They gave a division of the business as follows: † —

	New Division.	*Old.*
East Tennessee, ...	22%	14%
Louisville & Nashville, ...	42	48
Western of Alabama and Montgomery & Eufaula,	36	38

A similar dispute arose at about the same time over the Selma cotton business. The Executive Committee agreed to refer the matter to an arbitrator. Immediately thereafter, the initial roads entered into a contract, as provided in Article 20 of the Agreement, dividing the business according to his decision.

In close connection with the making of rates is the matter of classification. In the classification of the Association, as it stood in 1886, there were specified in round numbers 1,250 articles. The classification of the Association was adopted in the first instance by the annual convention of 1878, but since then has been in the hands of the Rate Committee. Even the first classification was drawn up and proposed by a committee corresponding to the present Rate Committee.‡ The result

* Argument before the Board of Arbitration by the East Tennessee, Virginia & Georgia Railroad.

† 16 *Circular Letters*, 41. ‡ 19 *Ibid.*, 1687.

has been a single uniform classification for the whole Southern territory, in place of the chaos which had existed before. "In July, 1876, the Eastern lines had two classifications. The Savannah line used 9 classes, and the Charleston and Coast lines worked 5 and 6 classes. The Western lines were using the 'Green Line' classification, with a number of 'Specials.'"* The advantage of having one classification for all the roads in a section of the country, or even for the whole country, if that were possible, is obvious.

The third task involved in the making of rates is the fixing of the differentials between neighboring cities. The general object in fixing the differentials was to make such rates that all cities similarly situated should have the same chance in the competition of trade. Thus a New York merchant would have to pay the same rates, whether he shipped his goods to Chattanooga, Dalton, Rome, Atlanta, Athens, Gainesville, Anniston, or Birmingham. On the other hand, Boston, New York, Philadelphia, were treated alike, the rates to and from any given Southern point being the same. Norfolk, Portsmouth, and Richmond formed another group; and, again, Charleston, Port Royal, Savannah, and Brunswick. From the West, rates were the same from Chicago to all Eastern ports, such as Jacksonville, Fernandina, Charleston, Port Royal, Savannah, and Brunswick; and in like manner from either Louisville or Memphis to the Eastern ports. These examples suffice to indicate the principle on which differentials were adjusted. As new roads were built, of course new places had to be considered. Thus, in 1886, the East Tennessee, Virginia & Georgia moved, in the Rate Committee, that the rates to and from Rockmart, Georgia, be the same as to Cedartown, Georgia. The two towns were between ten and twenty miles apart, and were doing substantially the same business. The motion was lost, and the matter referred to the Executive

*19 *Circular Letters*, 1687. In January, 1888, a committee was appointed by our Association to confer with the Joint Classification Committee of the Trunk Lines Association and others, for the purpose of ascertaining what possibility existed for establishing a uniform classification. But thus far none has been agreed upon; and it is questionable whether an agreement is reached at an early day, unless the Interstate Commerce Commission succeeds in bringing enough pressure on the roads.

Committee. There again it was lost, and referred to the Arbitrators, who finally directed that the rates to Rockmart be the same as to Rome and Cedartown.* At another time, in August, 1886, a question arose as to differentials on cotton from Atlanta to New Orleans and to Savannah. The old differentials had been 7 cents per 100 pounds in favor of Savannah. The motion now was to reduce this to 3 cents. The Arbitrators finally agreed on a compromise differential of 5 cents, the rate to New Orleans being put at 50 cents per 100 pounds, and that to Savannah at 45 cents.†

Before leaving the Rate Committee, a word may be said on some other features of the working of the Association, with which that committee was mainly concerned. It brought about a check to the free-pass evil. All the roads had been in the habit of issuing passes as a sort of premium on business. In 1884 they agreed to stop the practice, and the agreement has been substantially carried out. In 1887 a further step in the same direction was taken, the Executive Committee voting that passes to the car-tracers and agents of the refrigerator lines, which were liable to abuse, should be given up.

Next, as to the relations of the Association lines with outside lines. In its dealings with these, the Association has not always been lenient, especially when there was competition between its members and the outsiders. In the revised rules adopted in December, 1876, there was the following provision: "If any company owning or operating a line of transportation in connection with the roads or lines of companies, parties hereto, shall refuse to become a member of the Association, . . . such line shall, as far as practicable, be refused recognition as part of a through line."‡ This practically amounted to boycotting such lines. The provision for a boycott does not appear in the later agreement, though there have been recent cases where some such rule would, no doubt, have been very acceptable to the roads of the Association; as when the Chesapeake & Ohio was completed to Newport News, and again when the Kansas City, Memphis & Birmingham was built to

*20 *Circular Letters*,, 102, 114, 121, 467. †19 *ibid.* 2041; 20 *ibid.*, 47.

‡2 *ibid.*, 598.

Birmingham. These roads, being outside of the Association, often reduced the rates and materially affected the business. Following up the policy here indicated, the Commissioner, in August 6, 1877, issued a circular authorizing greatly reduced rates to Boston and New York and to the South Atlantic ports. The reason was that the steamship lines to and from these points had refused to co-operate with the Association in carrying out its rules. Within three weeks, all the steamship lines had signed the agreement, and rates were restored.*

Equally troublesome was the competition of the river steamboat lines. Often the differentials between two cities, such as St. Louis and East Cairo, were sufficient to allow the boats to cut rates, even after paying insurance. To prevent this, in the case referred to, the rates to East Cairo were advanced enough to make them the same as to Cairo, across the river, thereby reducing the differential between East Cairo and St. Louis two cents per hundred pounds on Classes C and D, and four cents per barrel on flour.† Rates to Selma and Montgomery from the East were cut in a similar way by the New York & Mobile Steamship Line. The Association changed their rates to stop this: a few months later, the competition being withdrawn, they were restored.‡

Next, let us turn our attention to the Board of Arbitration. The duties of the Board have already been referred to in a general way, and in treating of other subjects examples have incidentally been given of the exercise of their powers. It will be helpful to give other examples, illustrating the variety of cases which come before them.

Perhaps the matter that they had to consider most often was that of making divisions of the competitive business, of which one instance, the Montgomery and Selma pool settlement, was considered on page 82. We there saw that the business from these points was pooled from 1881 to 1883. Then, the East Tennessee, Virginia & Georgia becoming dissatisfied with its share, a year followed without the pool. But in 1884 a new division of the business was made by the Arbi-

*3 *Circular Letters*, 897, 931. †22 *Ibid.*, 131. ‡22 *Ibid.*, 21.

trators, whereby the East Tennessee got more nearly the share of the business which it demanded. In 1886 this question came before the Arbitrators again, but in a more complicated form.* In the first place, the East Tennessee renewed its claim for a larger share of the business from these points. This was refused in the case of Montgomery, but from Selma the East Tennessee got one per cent. in addition to its previous proportion. Next, when the annual convention was held, and the agreement presented as usual for signature, the Louisville & Nashville refused to sign, on the ground that balances to the amount of $5,500 were still due it on the Montgomery and Selma pool. This amount was said to be due from the East Tennessee Road, which had lately gone out of existence by the foreclosure of a mortgage, becoming the East Tennessee, Virginia & Georgia Railway Company, and from which, in consequence, the money could not be collected. After having been debated in the Executive Committee, the matter was handed over to the Arbitrators to decide what balances, if any, were due, and how they were to be divided among the several roads. They agreed that the condition of the accounts before August 31, 1884, the date on which the second pool went into effect, was too confused to admit of any unravelling. Hence all balances before that date were considered cancelled and discharged. On the business after that date, they decided that a balance of $3,700 was due the Louisville & Nashville, of which the East Tennessee should pay $976. These had been the precise amounts given in the accounts of the Commissioner.†

Another typical case, showing the usefulness of the Arbitrators in alloting business, came up in connection with the traffic of Memphis and Nashville. There had been no previous division of the business to these points, and rates had been irregular for a considerable time. Finally, in the summer of 1885, an agreement was made by the East Tennessee and the Louisville & Nashville Roads, the competitors for the business, to maintain rates, and ask the Arbitrators to allot the business. This allotment was made, and accepted by both roads.‡

*20 *Circular Letters*, 53. †19 *Ibid.*, 2048; 20 *Ibid.*, 55. ‡17 *Ibid.*, 1490.

Another case, of a somewhat different sort, was brought up by the Louisville & Nashville* at a later period. Under the terms of the agreement, the initial lines from any point "shall determine the subdivisions of its business among its connections." The Louisville & Nashville claimed that it was not receiving from the Atlanta & West Point, with which it connected, its fair share of the Atlanta cotton, and so demanded an apportionment, extending back to 1877, or at least to 1884–85. The two claims differed only in regard to the dates. In regard to the second, it was decided that a fixed share of the Atlanta & West Point business should be given to the Louisville & Nashville, the share to be determined by the Auditors' accounts.† In regard to the other, no division was allowed, on the grounds that previous to January 17, 1883, the part of the Louisville & Nashville for which this claim was made had not been a member of the Association; that until 1884 it would not have been obliged to pay over the receipts from any excess that might have fallen to it, and so should have no claim for a deficit of freight carried.‡

At another time, cotton was shipped from a local station to Montgomery, a competitive point, on a local bill of lading, and then reshipped. This was held to be subject to the regular pool divisions of Montgomery, according to the agreement, by which "all business from or to a crossing or meeting point of two or more roads is joint traffic." §

A peculiar dispute, important as illustrating one of the articles of the agreement, came before the Board in 1887.‖ It is spoken of here because closely connected with the matter of allotting business. Complaint had been made that the East Tennessee Road had carried some cotton from Selma which it had failed to report for division. In answer, it was stated that the cotton in question had been refused by the Western

* 20 *Circular Letters*, 263. † 20 *ibid.*, 469.

‡ These cases are interesting in another way. The Louisville & Nashville were dissatisfied with the decisions given, and asked for a reopening of the matter. Although such a thing may be allowed, and at times has been allowed, the Arbitrators at this time did not see fit to grant the rehearing. 21 *ibid.*, 1107.

§ 18 *ibid.*, 205. ‖ 22 *ibid.*, 155.

Railroad of Alabama and others. The Board held that, according to Article 19 of the Agreement, this cotton should be eliminated from the pool, and need not be reported. Article 19 reads that "each company shall be required to carry, as nearly as possible, its allotted proportion," but "no penalty shall be imposed upon a company or line which carries an excess for the benefit of any company that refuses or wilfully neglects to carry its allotted proportion." The object of the article was, of course, to keep all the roads in the market. Its effect was to maintain competition, notwithstanding the pool.

Next in number, but less varied in character, are the cases relating to rates and differentials. Some of these have already been noted. The dispute on New Orleans and Savannah differentials, and the difficulties that arose in regard to steamship competition on Ohio and Mississippi River points, were in the end settled by the Board. Another, of a typical sort, referred to the rates on iron from Birmingham and Chattanooga to St. Louis. The Kansas City, Memphis & Birmingham Railroad (not in the Association) had lowered the rate from Birmingham to St. Louis. This was followed by a similar reduction by the Association, but without a corresponding reduction in the Chattanooga rates. On reference to the Arbitrators, it was decided that the old differential of $0.25 between Chattanooga and Birmingham should continue in force, and that any reduction in the rates from Birmingham should carry with it a corresponding reduction from Chattanooga.*

The Board of Arbitration have also had to consider various other questions. Points in regard to classification have arisen, as in regard to the classification of cotton goods, the products of Southern mills. These goods, which had been favored from the outset by a low classification, were raised in 1887 from the sixth to the fourth class, thereby removing in part one of the "protective" features of the system. Even after this change the rates were not the same both ways. Cotton factory goods South-bound went first class at $1.14 per 100 pounds, New York to Atlanta. Southern factory goods

* 22 *Circular Letters*, 363.

North-bound paid now, as fourth class, instead of 49 cents, 78 cents. "But for the fact," the Arbitrators said, in giving their decision, "that finer fabrics shipped South-bound, some of them without discovery, are of higher value than those shipped North-bound, the still existing inequality would be unjustifiable."* Another minor matter which has come before the Board has been the question of insured bills of lading. The agreement provides, in Article 21, that, "in cases of competition between all rail lines and water or combined water and rail lines, the latter may assume the whole burden of insuring against marine risks; and bills of lading to that effect may be issued." The Arbitrators decided that such insured bills of lading could be issued in competition with all rail lines only, the privilege not applying between two combined rail and water lines.† Another decision was as to what were "initial roads" under the agreement. It was held that the phrase "initial roads" is not used in distinction to "terminal roads," but that the responsible road at any given point was the initial road.‡ Still another decision was in regard to "milling in transit," which was held to be a form of rebilling, and hence prohibited.§

These cases have been cited, not because in themselves of great importance, but because they show the great variety of matters which the Arbitrators had to deal with. They are all types of cases that come up often. They include, either directly or indirectly, nearly all the matters over which the Association had control. The task of the Board has been by no means an easy one. There were many masters to please, but it has performed its functions without even a suspicion of dishonesty or partiality.

We have thus far been considering in detail the organization and workings of the Association as it existed down to 1887. It now remains to note the changes which were brought about by the Interstate Commerce Act passed in that year. The Act, first of all, stopped the pooling feature of the Association. The twenty per cent. deposits were no longer

* 20 *Circular Letters*, 261; 21 *ibid.*, 1105. † 16 *ibid.*, 45.

‡ 18 *ibid.*, 203. § 20 *ibid.*, 259.

called for, and the payment by one road to another of any excess of earnings above allotment was put an end to. The daily reports of business and the monthly tables, however, were still continued. The act also required some readjustment of rates. While each road reported its rates to the Interstate Commerce Commission directly, and aimed to keep them, as nearly as possible, in line with the decisions of that Commission, yet the through rates were, in the main, discussed and arranged as before by the Rate Committee of the Association. At first the committee of the Association had some difficulty in arranging rates so as to compete successfully with the river lines, and therefore asked for and obtained a suspension for ninety days of the long and short haul clause of the act. The delay was asked mainly to give time for rearranging the rates without disturbing more than was necessary the interests of the shippers. In making the rearrangement, a partial reclassification was necessary; and the number of places to which through rates were made was somewhat reduced, in order to get more nearly in line with the requirements of the law. The Association was recognized by the Interstate Commerce Commission, and on several cases has been summoned to appear before it for examination.* Complaints have also been brought against the Association before the Commission for illegal rates. At times the roads over which the rates in question were given were joined as codefendants, but this has not always been the case.

The prohibition of pooling by the Interstate Commerce Act by no means put an end to the power of the Association. It still continues, having for its object the saving of revenue by the maintenance of rates. Though pool divisions may no longer be made use of, fines may be imposed to accomplish the same end. A recent case will serve to show how this is done.

In the adjustment of rates from Eastern cities to Southeastern points, it happened that a combination of "locals" from Baltimore to some of these cities was less than the through rates. This was not true from any other city. The business, however, from Baltimore to the points in question

* 3 *Interstate Commerce Reports*, 7.

was so small that the differences amounted to nothing. One road, without consulting the Commissioner, reduced the through rates to this combination of locals, thereby affecting all through rates from New York and Philadelphia to these South-eastern points. The Interstate Act requires that notice of reductions of rates must be filed in the office of the Commission at least three days before they can go into effect; for the Southern Railway & Steamship Association territory the practice is that all changes are made by the Rate Committee, and notice is given at Washington by the Commissioner. The road in question filed notice of reduction itself with the Interstate Commerce Commission, and then notified the Commissioner of the Southern Association of the intended change. That officer at once notified the other roads interested; but these protested against the reduction as unnecessary and unwise, and asked that the rates be not put into effect until the matter could be brought before the Rate Committee. Notwithstanding these remonstrances, the rates were put into force as originally planned. Thereupon one road, connecting with a water line, in retaliation issued insured bills of lading; another refused to authorize the reduced rates except upon order of the Commissioner of the Association. Permission to use them was given by the Commissioner; but, as the rates were not officially announced by him, the road still refused to use the reduction or honor bills of lading given at the reduced rates. The matter was very soon brought before the Executive Committee in the shape of a complaint. It was referred by them to the Arbitrators, who, after a full hearing, ordered the original rates to be restored and the offending road to pay a fine of $5,000. The fine was paid, and rates were restored within three weeks after the original reduction.

This brings the Association to date. Let us now glance at its effects on the roads and on the public.

There can be no doubt that it has been of great benefit to the roads. It has secured the maintenance of rates, and an adjusted share of business to each line. The stronger lines would perhaps have survived without this division, but hardly the weaker. As to the public, the regularity of rates has

helped the growth of the country, and this has reacted in turn to the benefit of the roads. The traffic has increased enormously. The amount of cotton carried North from all pooled points has more than doubled from 1877–78 to 1885–86. In 1877 it was 297,284 bales; in 1885–86 it was 664,337.* The amount of merchandise South-bound has increased in the same time from seventy million pounds to nearly one hundred and fifty million. The total of merchandise carried South in this time to all pooled points was 1,285,928,199 pounds, with a revenue of $8,747,564. The total cotton revenue in this time was $10,905,000. During the same period, the General Commissioner's deposits, referred to above, were $1,636,270.

The regularity of rates under the Association is the advantage to the public most distinctly due to its existence. Changes in rates have been comparatively few, and secret rebates rare. Such changes as took place have been almost uniformly downward; and, as reasonable notice of these has been given, there has been no offset to the public's gain such as sudden and fluctuating reductions bring. The figures in the note show the steady downward trend of rates, and prove at least that the effect of the Association was not to maintain rates at any fixed high figure.† Certainly, that part of the public which had to do directly with the roads in the Association was not dissatisfied with the working of the pool. In 1887 the General Commissioner was able to say at the annual convention, "There has been literally no complaint of discrimina-

*21 *Circular Letters*, 1626.

† The rates, in cents per hundred pounds on numbered classes, from Eastern cities to Atlanta on the first of January of each year, have been:—

Year.	*From Boston, New York, Philadelphia.*						*From Baltimore.*					
	1	2	3	4	5	6	1	2	3	4	5	6
1875	170	140	110	90	80	70	160	130	100	85	75	65
1876	170	140	110	90	80	70	160	130	100	85	75	65
1877	145	125	100	80	60	50	135	115	90	75	55	45
1878	145	125	100	80	60	50	135	115	90	75	55	45
1879	125	110	85	75	60	45	119	104	79	71	56	41
1880	125	110	85	75	60	45	119	104	79	71	56	41
1881	126	110	94	81	65	41	119	104	89	76	61	46
1882	100	90	80	70	58	48	95	85	75	65	55	45
1883	125	108	93	78	63	49	118	102	88	73	59	46
1884	114	98	86	73	60	49	107	92	81	68	56	46
1885	114	98	86	73	60	49	107	92	81	68	56	46
1886	114	98	86	73	60	49	107	92	81	68	56	46
1887	114	98	86	73	60	49	107	92	81	68	56	46

tion between individuals in the same locality, and very little (and that unreasonable) between localities." *

In conclusion, a word may be said of the effect of the Association in maintaining rather than suppressing competition among the roads. Pools of which this is a type do indeed limit competition. But it is a great mistake to suppose that they destroy competition. On the contrary, as Professor Seligman puts it,† "they maintain the advantages of a healthy competition. Each of the roads will still attempt to procure as much business as can possibly be obtained in a fair and open manner." The agreement of the Southern Railway & Steamship Association was renewed yearly, and most of the contracts for division of business were made for a year at a time. Each road tried to carry as much freight as possible, so that, when the next contract came to be made, it might demand with some show of reason a larger share of the business. It is competition of this sort that is advantageous, not competition with little or no regard to the cost of doing the work.

HENRY HUDSON.

* 21 *Circular Letters*, 1620.

† In the *Political Science Quarterly*, vol. ii. p. 389.

NOTES AND MEMORANDA.

THE most important publication of the quarter, at least for English readers, is the first volume of Professor Marshall's *Economics of Industry*, issued by Messrs. Macmillan. The same firm announces that the English edition of Professor Boehm-Bawerk's *Positive Theory of Capital* is nearly ready for publication.

Messrs. Williams & Northgate announce as nearly completed the second volume of Mr. Charles Booth's survey of industrial London. It will be more general in scope than the first volume, and will be illustrated by a poverty map of all London.

THE mode in which the silver act of July last will work must depend in part on the action of the banks, through whose hands the new currency passes in finding its way into circulation. The silver certificates of the older issue, when received by the banks of New York and other large Eastern cities, were either returned by them at once in general circulation or, failing that, were paid into the Treasury in discharge of public dues. In regard to the new notes, the usage, so far as yet established, seems to be to treat them, with more favor, as "current funds"; and this usage will probably be maintained so long as the Treasury redeems them in gold. We may therefore expect them to constitute a larger item in the bank holdings than the silver certificates, and to play a larger part in payments between banks. Nevertheless, the situation will probably present no essentially new features. No considerable amounts are likely to be held or used by banks; and the actual circulation of the new notes, like that of the silver certificates, will be limited to the small denominations. The first of them printed, as it happened, were in denominations of a thousand dollars and upwards, and found their way back into the Treasury as promptly as did the large silver certificates when these were first issued.

We reproduce from *La Réforme Sociale* of May 16 certain figures on the movement of population in Aucomville, a commune of Southern France, in the department of Tarn-et-Garonne, along the fertile banks of the Garonne. The figures, which were gathered from the registers of the parish by its curé, the Abbé Galabert, reflect in a striking manner the salient events in the economic and political history of France for the last three centuries. The boundaries of the commune have been changed only once, and then very slightly; it has been purely agricultural throughout, and has been little affected by emigration and immigration; it presents, therefore, a remarkably favorable field for continuous observation.

M. Galabert presents his results in three tables, for the seventeenth, eighteenth, and nineteenth centuries, the figures in each century being given for periods of ten years.

I. Seventeenth Century.

Years.	Births.	Marriages.	Deaths.	Natural Growth of Population.	Remarks.
1597–1608 (1599 missing.)	393	54	297	96 increase.	Marriages not given for 1607 and 1608; more than 15 persons devoured by wolves.
1609–19	405	73	360	45 "	
1620–33 (1622–25 missing.)	352		579	227 decrease.	Epidemics in 1620, 1629, 1630, 1631.
1634–43	474				Marriages and deaths not given.
1644–53	399				
1654–63	411				
1664–74 (1668 missing.)	583	52	386	197 increase.	
1675–84	541	87	459	82 "	
1685–96 (1689 and 1694 missing.)	457	77	406	51 "	
1697–1708 (1698 and 1699 missing.)	509	83	367	142 "	

The most striking feature in this period is the extraordinary mortality of the third decade, due to the pest, which again

was mainly caused by the misery brought on by the religious wars. In 1629 alone there were 130 deaths; in 1630, again, 96. With the consolidation of the royal power and the end of the civil wars, prosperity begins, and the births increase, the maximum being reached in 1664–74, in the time of Colbert. Thereafter, the births decline, the deaths tend to increase; but, on the whole, the second half of the century shows a steady natural increase.

II. Eighteenth Century.

Years.	Births.	Marriages.	Deaths.	Natural Growth of Population.	Remarks.
1709–18	429	80	527	98 decrease.	
1719	48	12	49	1 "	
1720–29	418	82	302	116 increase.	
1730–39	418	44	356	62 "	
1740–49	410	77	331	79 "	
1750–59	372	65	421	49 decrease.	Marriages and deaths not given for 1757.
1760–69	384	74	313	71 increase.	
1770–79	373	86	390	17 decrease.	January of 1772 missing.
1780–89	405	96	379	26 increase.	
1790 and 1792 (1791 missing.)	60	15	121	61 decrease.	

The figures for the first years of the eighteenth century confirm the statements common among the writers of the time as to the wretched state to which France was then reduced by the disastrous war of the Spanish succession. The death-rate is at its maximum, and the deaths greatly exceed the births. With the end of the war there is a prompt recovery: in 1720–29, the births exceed the deaths. Thereafter, the population seems to have remained almost stationary, sometimes gaining by natural increase, sometimes losing. For the whole eighty-three years, the births were 3,317, the deaths 3,189,— a net gain of 128. The years immediately preceding the Revolution were sad: M. Galabert notes extraordinary mortality in 1778, 1780, 1782, 1783, 1789. The figures for 1790 and 1792 speak for themselves.

For the troubled years at the close of the century, figures

were not attainable; and the next table begins with the year 1804, and is complete only from 1821.

III. NINETEENTH CENTURY.

Years.	Births.	Marriages.	Deaths.	Natural Growth of Population.	Remarks.
1804–20 (17 years.)	479	132			Deaths not given. Births average 28+ per year.
1821–30	296	90	174	122 increase.	
1831–40	287	119	261	26 "	
1841–50	287	94	275	12 "	
1851–60	259	104	219	40 "	
1861–70	254	102	227	27 "	
1871–80	228	85	248	20 decrease.	Small-pox epidemic in 1871.
1881–88 (8 years.)	131	54	168	37 "	
1881–90?	165	67	210	45 "	Figures for 1881–90 calculated on the basis of those for 1881–88.

The generation after the Napoleonic wars shows the marked increase of population which then took place throughout France. Thereafter, the general slackening makes itself felt. For the last two decades, the figures reflect strikingly the tendency towards an absolute fall in the population of agricultural France.

Looking over the three tables, we find a marked decline both in births and deaths in the nineteenth century, compared with the eighteenth and seventeenth. The total population is not stated, but has probably been at least as large in this century as in the two preceding; so much, indeed, might be inferred from the fact that marriages have been more numerous. We have, therefore, less births and deaths, more marriages, or, at least, no less,— a striking illustration, not less so because on a small scale, of the working of the preventive check in France.

ANOTHER step in the series of measures by which the German Empire seeks to deal with social questions has been taken by the act of July 29 of this year, for the establishment of courts of arbitration and conciliation. The communes are

empowered to establish courts for these purposes, which are to consist of a chairman (who may be neither employer nor workman) and associates elected in equal numbers by employers and workmen. If the communes do not act, and if either employers or workmen request it, the central authorities may establish courts of the same sort; and for mining industries they may do so without request from any one. The courts in all cases are to be permanent, the members holding office for at least a year. Their jurisdiction for arbitration extends to all disputes arising in connection with the contract of service. As to such, they are courts of law, and their decisions have binding force.

More interesting to the student of economics are the provisions by which these bodies are to act as courts of conciliation. The disputes arising between employers and workmen "in regard to the conditions under which work is to be continued or resumed" — that is, in strikes and lock-outs — they may endeavor to conciliate, if called on by both parties. When so called on, they are to endeavor to bring about an agreement. If unsuccessful in this, they are nevertheless to reach a decision, with the proviso, however, that, if the representatives of the workmen are all of one mind and those of the employers all of another, the chairman may withhold his vote, and so prevent any conclusion. The decision, if reached, is merely in the nature of a recommendation, to be communicated to the parties, and published at large.

With such limitations in the powers it gives, this latest of the German "social" measures is not likely to have any wide effects. The new courts, in their capacity as arbitrators, will hardly do more than to bring about a more speedy settlement of petty disputes. As boards of conciliation, the proviso by which they can step in only at the request of both parties seems to stand in the way of their accomplishing much that would not be done without them.

STUDIES ON THE ORIGIN OF THE FRENCH ECONOMISTS.

The French school of thinkers, which preceded and influenced in so marked a manner the British originators of systematic economics, and which in consideration of its recent revival is rendered still more interesting, has hitherto been judged in a most contradictory manner. "Their method and fundamental ideas were negative," says Mr. Ingram, "resting, as they did, essentially on the basis of the *jus naturae*." * On the other hand, however, an authority no less respectable than the late Professor Jevons declares that "the truth is with the French school, and, the sooner we recognize the fact, the better it will be for all the world." †

It would be almost as difficult to reconcile these divergent opinions as to arrive at a definite conclusion through the known works of the physiocratic school. The followers of Quesnay, jealous of their prestige, purposely concealed the circumstances which led to the development of their science and endowed it with its characteristic method. They declared that about the year 1750 two ingenious men, Quesnay and Gournay, had asked themselves "whether the nature of things did not tend towards a science of political economy, and what the principles of this science were." The task of specifying this "nature of things" they, however, left to posterity, unconscious that the superficial attire of their theories might some time be mistaken for their essence.

The discovery of some manuscripts and letters of Quesnay, the leader of the school, have rendered me doubtful as to whether the historians of political economy have hitherto done justice to the methods and intentions of the French economists. I have elsewhere given copious extracts from the manuscripts in question, ‡ and am gratified now to have an opportunity of exhibiting to an Anglo-American public the results which my researches have yielded.

* *A History of Political Economy*, p. 57.

† *Theory of Political Economy*, p. xliii.

‡ *Jahrbücher für Nationalökonomie und Statistik*, N. F., Bd. xxi., August, 1890, "Zur Entstehung der Physiokratie."

Two years ago, Professor A. Oncken, of Bern, re-edited the works of Quesnay, affirming that the celebrated *Tableau Economique* was lost forever; and, moreover, he was unable to find the articles "Hommes," "Impôt," and "Interêt de l'Argent," which, like the well-known articles "Fermiers" and "Grains," Quesnay had written for the great *Encyclopédie*, but which he had withdrawn when the latter work was forbidden by the government in 1757. Professor Alfred Stern, of Zürich, who was just preparing his *Life of Mirabeau*, expressed in a criticism of Oncken's edition the opinion that at least fragments of the *Tableau Economique* might be found among the papers of Mirabeau the elder in the Archives Nationales at Paris. My friend, the historian, Dr. Ludo Moritz Hartmann, of the University of Vienna, drew my attention to these observations; and, when studying the history of economics at Paris, I found the following documents: the original manuscript of the first edition of the *Tableau;* a second edition printed in three copies; a series of letters of Quesnay to Mirabeau, explaining his economical and political ideas; and a manuscript copy of Cantillon's *Essai sur la Nature du Commerce en Général.* Encouraged by these discoveries, I investigated the catalogue of manuscripts in the Bibliothèque Nationale. There I found the article "Hommes." All my further researches have hitherto proved fruitless; but I regard the new materials as a sufficient justification for venturing a view different from the one commonly accepted concerning the rise and methods of economics in France.

The article "Hommes" is a statistical, historical, and theoretical inquiry into the subject of population, its distribution and its decreasing tendency, and into the causes of the latter phenomenon. By a careful estimate, the author arrives at the conclusion that an artificial policy had drained the people from the country into the towns, by depriving them of their means of subsistence. Fiscal extortion, occasioned by the military policy of Louis XIV. and the favor bestowed upon the towns in providing cheap bread, had caused great agricultural distress. He shows that high prices accompanied the development of agriculture in England, whereas low prices changed the farmers of France into retailers and servants.

The stress laid upon English agriculture by Quesnay induced me to further investigations upon that point. I found that the new methods of agriculture which were introduced in England about the year 1730 by Jethro Tull, Coke, and Viscount Townsend, had produced the greatest sensation in France. Duhamel du Monceau had systematized in 1750 the "New Horsehoeing Husbandry" of Tull, and among the French landed proprietors who availed themselves of these innovations was the royal physician, François Quesnay.* His practical experience as an agriculturist gave him, it is natural to suppose, a most vivid insight into the distress of his neighbors, who from want of capital were unable to compete with their wealthier rivals. At the same time, his theoretical superiority over his predecessors was largely due to his knowledge of English economics. The works of Locke and Law had indeed influenced French economists like Mélon and Dupré de St. Maur.† But Cantillon's work was almost exclusively the source of the physiocrat doctrine that the application of capital to agriculture is the sole fountain of all wealth. Besides this last representative of English physiocracy, which was to a good extent a development of mercantilism,‡ Hume's essays (translated in 1754 into French) gave a proof of the futility of the reigning doctrine of the balance of trade. But his theory of the creation of wealth by labor, the outcome of Sir William Petty's doctrine of its production by population, which Cantillon had accepted and Mirabeau had subsequently introduced into his *Ami des Hommes* (1756), was refuted by Quesnay. For in France capital was wanting, and the increase of population seemed to be the consequence, and not the cause of it. This divergence from the English doctrine is therefore to be ascribed to his observations, as set forth in his articles.

* His successful experiments are described by Henry Patullo, *Essai sur l'Amélioration des Terres*, 1758, p. 77.

† In the *Ephémerides du Citoyen* for 1769, ix., p. 67, Dupont de Nemours regrets that the wise principles and truths found in the works of Culpeper, Locke, Decker, Child, and especially Josiah Tucker, had not become known earlier.

‡ In an article on Cantillon, in the forthcoming *Dictionary of Political Economy*, edited by Mr. R. H. Inglis Palgrave, I shall introduce such proofs as will indicate his English nationality.

The inference he drew was a negative one indeed: that all economic reform must commence with putting aside all restrictions on the exportation of corn, which occasioned a want of outlet and the ruin of the rural population. But such a negative programme could not be prescribed as a cure for another national distress,—the financial confusion. Machault, the controller of finances of 1750, was unable to create order, and after him Silhouette gave a fatal blow to public credit. His successor in 1760 found the treasury empty. One *vingtième* was raised after another. The parliaments protested in vain against government vexations, but, in spite of the public calamity, were unable to recommend other measures than "economy in the necessary expenses."

Plans of financial reform, especially concerning the *taille*, had been modelled a long time before. The levelling and centralizing tendency of Louis XIV.'s administrative policy had given its stamp to most of them. One of the first of these "systems," the *dîme royale* of Vauban, exhibits the advantages of a tenth upon all estates whatever. Other financial reformers were De la Jonchère, Law, Boulainvilliers, St. Pierre, and D'Argenson. But their projects, even when introduced, like St. Pierre's, proved failures. They were not founded upon a scientific knowledge of the objects to be taxed, and, when calculated to remove the load from one class of tax-payers, proved oppressive to another. But a doctrine of taxation had been developed by Quesnay in his articles in the *Encyclopédie*. He had calculated the amount and productivity of capital necessary to obtain a sound state of agriculture. Capital, therefore, in its application to agriculture, was to him the only means of obtaining a taxable net produce. By means of this theory of income he could proceed to build a natural system of finances, not an arbitrary one, like that of his predecessors.

The letters accompanying the *Tableau Economique*, which Quesnay sent to Mirabeau, show that such was the original character of the physiocratic system. "I have tried," he says, "to make a fundamental tableau of the economic system [*de l'ordre économique*], in order to represent consumption and production in a manner easy of comprehension, and to

permit of a clear judgment of the arrangements and disorders the government is capable of producing in it." After reflecting upon the present state of financial affairs, and the advice of the parliaments already mentioned to make "economies in the necessary expenses," he concludes with saying that "a fearful crisis would come, and there would be need of remedies."

The *Tableau Economique* (first edition in manuscript) consists of three columns. The first represents the productive capital, amounting to 400 livres. This yields a net produce of 400 livres, a hundred per cent., as English agriculture is supposed to do. This enters into the second column. In the third column the sterile investments, which contribute nothing beyond their own cost of reproduction, are assumed to be 200 livres. The revenue of the landed proprietors (the net produce in the second column) distributing itself equally into the sums of 200 livres towards both sides, its farther distribution may be traced by farther subdivision unto the last *sol*.

He computes that twelve million men could live on 600 million livres reproduced in this manner. Taxes are among the sterile expenses. "They fall either on the landed income, upon the advances of the farmers, or upon consumption. In these latter cases, they are injurious, and diminish reproduction."

The premises of such a sound order of distribution are enumerated in a following chapter, entitled "Remarks on the Variation of the Distribution of the Nation's Yearly Revenues." In a letter, Quesnay recommends to Mirabeau the perusal of the second edition of the *Tableau*, of which he sends one of the three existing copies. In this edition, he assumes a revenue of 600 livres; "for a revenue of 400 livres was too meagre a portion to set out from, resembling, as it did too closely, the distressing condition of our poor inhabitants in this realm of atrophy and *marasme*, which, most unluckily, is subject to the treatment of a physician, who, without the application of restoratives, is not sparing of bleeding and fasting." Besides this difference, there is a difference in the title of the following chapter. Instead of "Remarks on the Variation of the Distribution of a Nation's

Yearly Revenues," it is entitled "Extrait des *Economies Royales* de M. de Sully." Considerably increased in matter, these remarks are known as the catechism of the physiocratic school, under the title "Maximes générales du gouvernement économique d'un royaume agricole," a name which appeared for the first time in the *Philosophie Rurale*, page 280 (1763).

A second part is also introduced by a *Tableau Economique*, which is interpreted at length, ("Explication du Tableau Économique"). It is an inquiry into the kinds and sources of expenses, of advances, their distribution, effect, reproduction, their relations reciprocally and to population, agriculture, industry, commerce, and to the general riches of the nation. It closes with an attempt at estimating the latter in a nation where the proprietors enjoy a revenue of 600 livres. The calculation reaches the sum of fifty-five to sixty thousand millions of livres for both productive and sterile classes. Such a happy economic state is not to be attained so long as the following circumstances prevail: 1. A bad system of taxes falling upon the advances, in connection with which the axiom should be held in view, *noli me tangere;* 2. Burdensome costs of raising the taxes; 3. Excess of outward luxury; 4. Excess in law-suits; 5. Want of outlet for the produce of the land in foreign trade: 6. Absence of freedom in production and domestic trade; 7. Personal vexations inflicted on the rural population; 8. Failure of the net produce to return to the class of productive expenses.

This rapid sketch of the first systematization of political economy shows that the imperfect state of its development was the real cause of the secrecy with which its author withheld it from the public. But posterity takes, perhaps, a more impartial interest in these endeavors and into the methods which they display.

The *Tableau Economique* was the point of departure for all farther works produced by the school. The Marquis of Mirabeau made a long commentary on it, which was published as the fifth and sixth parts of his *Ami des Hommes*, 1760; but its most extensive development appears in the *Philosophie Rurale*. Both works were composed under the continual

supervision of Quesnay, who even wrote some chapters himself. In this latter work, he intended to apply the mathematical method to economics. Mirabeau opposed the introduction of such "hieroglyphics." His inexorable master, however, strictly denied economics the character of a science, if not following the mathematical method. "Qui dit ménage, dit calcul." He admitted himself only to be interested in results derived by calculation, and capable of forming a compendium of science; it should be the task of his school to extend and apply these results by his speculative reasoning. Some years later he modified his views, preferring a method more easily accessible to common intellects. It seems that the desire of propagating the practical tenets of his doctrines induced him to change his position in this manner. At the same time he was desirous of exposing the political tendencies of his doctrines.

It has always been an object of amazement that a school of free traders should have eulogized an absolute authority. But the physiocrats, it must always be remembered, were a court party, though a radical one. The direct criticism of existing abuses and freedom of language were forbidden them. The only way open to reformers was to oppose to arbitrary power a higher one,— the laws of nature. "These principles," says Quesnay in a letter to Mirabeau, "are not the principles of honest people; but they are their last anchors against the abuse of power. On one side is feebleness, on the other is blindness." This, therefore, is the true origin of their *jus naturae*.*

Failure in a certain degree undoubtedly attended the efforts of the economists: their chimerical political constructions have sunk into oblivion. But in the most flourishing period of their literary activity, while inquiring into the nature and functions of capital in a farmer's productive and household expenses, Adam Smith had made their acquaintance; and he owes in great part to them that systematic turn of mind, the want of which had hitherto caused the failure of all

* For a careful analysis of the *droit naturel*, in the sense in which the term is used by the physiocratic school, see Professor Huxley's article on "Natural Rights and Political Rights," in the *Nineteenth Century* for February, 1890.

attempts in the direction of a system of political economy in England.

Were, then, the method and fundamental ideas of the physiocratic school negative? and did they essentially rest on the basis of the *jus naturae*, as is supposed by many eminent authorities? Was it not rather methodical observation from which they proceeded? Did they not order the collated facts according to their causes? and did they not try to form a system of economics which, in their opinion, agreed with the sound state of a highly civilized country? And is not this the very same method of proceeding which has since, though often abandoned by theorists, always proved successful, when applied?

If these questions should not be answered negatively, I think a study of the physiocratic writings under discussion would be not merely a matter of curiosity

STEPHAN BAUER.

RECENT PUBLICATIONS UPON ECONOMICS.

[Chiefly published or announced since July, 1890.]

I. GENERAL WORKS, THEORY AND ITS HISTORY.

BAIN (F. W.). Occam's Razor: The Application of a Principle to Political Economy, to the Conditions of Progress, to Socialism, to Politics. London: Parker. 12mo. pp. 178. 2*s.* 6*d.*

BOUCTOT (J. G.). Études de Sociologie. Histoire du Communisme et du Socialisme. Tome I. Paris: Ghio. 18mo. pp. 455.

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PAASCHE (H.). Wandlungen in der modernen Volkswirthschaft. Akademische Rede [at Marburg]. Marburg: Ehrhardt. 8vo. pp. 32. .50 m.

PANTALEONI (M.). Principi di Economia Pura. Florence: Barbèra. 16mo. pp. 376. Charts. 2 fr.

POLLOCK (F.). Introduction to the History of the Science of Politics. London: Macmillan & Co. 12mo. 75 cts.

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WALCKER (K.). Adam Smith, der Begründer der modernen Nationalökonomik. Sein Leben und seine Schriften. Berlin: Liebmann. 8vo. pp. 56. 1.50 m.

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APPENDIX.

AGREEMENT

OF THE

SOUTHERN RAILWAY & STEAMSHIP ASSOCIATION.*

The successive articles are printed first as they stood in the Agreement of 1886–87. The changes made in the Agreement of 1887–88, after the passage of the Interstate Commerce Act, are then indicated at the end of each article, passages newly inserted or entirely recast being enclosed in brackets.

THE AGREEMENT OF THE SOUTHERN RAILWAY & STEAMSHIP ASSOCIATION,

WITNESSETH, That whereas the establishment and maintenance of tariffs of uniform rates, and the prevention of unjust discrimination, such as necessarily arises from the irregular and fluctuating rates which inevitably attend the separate and independent actions of Transportation Lines, is important for the protection of the public; and

Whereas it is deemed to be to the mutual advantage of the public, and the Transportation Companies, that business in which they have a common interest should be so conducted as to secure a proper correlation of rates, such as will protect the interests of competing markets without unjust discrimination in favor of or against any city or section; and

Whereas these objects can be obtained only by co-operation on the part of the various Transportation Lines engaged in the traffic in the territory south of the Potomac and Ohio Rivers and east of the Mississippi River: —

* This differs materially from the agreement as printed in the testimony of Mr. Albert Fink in the first *Report on the Internal Commerce of the United States* (1876), Part 2, Appendix, page 16. Many changes were made in the agreement between 1876 and 1886.

Now, therefore, in order to secure such co-operation among the said Transportation Lines, by providing means for the proper adjustment of differences which may arise between them; by placing all of their traffic, common to two or more companies, under the control of officers jointly elected; by the general conduct of the same under well-defined rules and regulations; and by just and equitable division of business, such as will naturally insure the maintenance of rates, or by actual apportionment,— it is mutually agreed as follows:—

[Now, therefore, in order to secure such co-operation among the said Transportation Lines, by providing means for the proper adjustment of differences which may arise between them, by placing all the traffic common to two or more companies under the control of officers jointly elected, and by the general conduct of the same under well-defined rules and regulations which will insure the maintenance of rates, it is mutually agreed as follows:—]

1. That the organization herein provided for may include all such Railways east of the Mississippi and south of the Potomac and Ohio Rivers, and the Steamship Lines connecting them with Boston, Providence, New York, Philadelphia, and Baltimore, which transact business with each other: such parties as are included in this agreement, or may hereafter be admitted as parties thereto by the action of a general convention; and that the Association herein formed shall be styled "The Southern Railway & Steamship Association."

Unchanged.

2. That the representatives of the several companies, members of the Association, shall meet in convention annually, on the second Wednesday in July, in the city of Atlanta, or at such other places as may be mutually agreed upon; and special meetings may be called at any time, as hereinafter provided.

Unchanged.

3. The business to be transacted in general convention shall be confined to the election of officers and fixing their salaries, the admission of new members and their representation on the

Executive Committee, and the adjustment of such matters as cannot be properly determined by the Executive Committee with the aid of the Board of Arbitration. Each company, a member of the Association, shall have one vote. Two-thirds of the whole vote of the members present shall be required to make the action of the convention binding. Companies, members of the Association, may be represented in the convention by the President, Vice-President, General Manager, Superintendent or General Freight Agent, in person or by proxy, provided that their proxy presents to the Secretary a properly attested power of attorney. In case of more than one nomination being made for any office, the election shall be by ballot.

Unchanged.

4. The Virginia, Tennessee & Georgia Air Line, Richmond & Danville Railroad Line, Great Southern Freight Line via Charleston, Great Southern Freight Line via Savannah, Louisville & Nashville Line, Cincinnati, New Orleans & Texas, Pacific Line, Western & Atlantic Railroad Company, Atlantic Coast Line, Nashville, Chattanooga & St. Louis Railway, and the Coastwise Steamship Association shall each designate a representative who shall be authorized to represent them in all matters of business with the Association or its members, and the several representatives so designated shall constitute an Executive Committee, of which the General Commissioner shall be chairman. If any Company or Line which is entitled to a representative fails to appoint one, or if their representative be not present at any meeting of the Executive Committee, such Company or Line shall be represented by the General Commissioner, acting as their agent under the authority conferred by this agreement.

Unchanged.

5. The Executive Committee shall meet at the call of the chairman whenever and wherever, in his judgment, it is necessary, or when any three members of the Committee request it; but all such calls must state the object of the meeting and the subject to be acted on by the committee. All absent

members shall be represented by the General Commissioner, whose duty it shall be to make himself familiar with their views and interests, so that he can represent them properly; and votes cast by the General Commissioner for absent members at any meeting, on any subject stated in the call, shall have the same force and effect in binding such members as if cast by them in person. Other subjects than those mentioned in the call may be considered and acted on in any meeting of the Executive Committee; but the assent of the absent members must be obtained, or the decision of the Board of Arbitration, before such action becomes binding on them. The Executive Committee shall have jurisdiction over all matters relating to the joint traffic, but shall act only by unanimous consent of all its members. All the business from or to local stations comprising a system is local business to the controlling system. All business from or to a crossing or meeting point of two or more roads is joint traffic. In event of failure to agree, the question at issue shall be settled by the Board of Arbitration hereinafter provided for. But this shall not be construed to give the Executive Committee or the General Commissioner any control over the local business of any company, even though such local business may, of necessity, pass through points at which the traffic is divided by apportionment.

Unchanged.

6. For the mutual protection of the various interests, and for the purpose of securing the greatest amount of net revenue to all of the companies parties to this agreement, it is agreed that what are termed Western Lines shall protect the revenue derived from transportation by what are known as Eastern Lines, so far as can be done by exaction of local rates; and that the Eastern Lines shall in like manner protect like revenue of Western Lines.

Unchanged.

7. The Executive Committee shall have the right, at their discretion, to appoint a Rate Committee and other sub-committees, either of their own number or from among the officers

and agents of the companies members of the Association, and to delegate to such sub-committees jurisdiction over such matters as may be specially committed to their charge. With a view of a proper relative adjustment of all rates, and especially a proper relative adjustment of rates on similar articles from the East and West to common territory, the Rate Committee herein provided for shall have sole authority to make all rates and classifications to and from all points East and West into Association territory. But the sub-committees shall act only by unanimous consent; and, failing to agree, the questions at issue must be referred to the Executive Committee for settlement.

The General Commissioner will be, *ex officio*, chairman of all sub-committees, and as such shall be the medium of communication between the sub-committees and the Executive Committee. Absent members of sub-committees will be represented by the General Commissioner, as in the case of absent members of the Executive Committee. During the interim between the reference of any matter of difference from a sub-committee to the Executive Committee and the final determination of such matter, the General Commissioner shall, if it be a matter requiring prompt action, have authority to decide it temporarily; and his decision shall be binding on all parties until reversed by the Executive Committee or by arbitration.

Unchanged.

8. The following officers shall be elected at the annual meetings, and shall hold their offices until the next annual meeting, and thereafter until their successors are elected: a President, a General Commissioner, a Secretary, an Auditor, and three Arbitrators.

Auditor not mentioned; otherwise unchanged.

9. The President shall preside over all general meetings of the Association, certify to the records of such meetings, and communicate the proceedings to all the members. He shall call a general meeting of the Association whenever he is requested to do so by three members of the Executive Committee, or whenever it is in his judgment necessary to do so.

Unchanged.

10. The Secretary shall make complete and accurate records of the proceedings of all general meetings of the Association, the originals of which shall be preserved in the general offices of the Association, and copies furnished to each member. He shall also act as Secretary to the Board of Arbitration, and to the several committees hereinbefore provided for, and preserve similar records of their proceedings.

Unchanged.

11. The General Commissioner shall be the chief Executive Officer of the Association, and, as the representative of its members, both severally and jointly, shall act for them in all matters that come within the jurisdiction of the Association in conformity with the requirements of this contract and the instructions of the several committees hereinbefore provided for, but exercising his discretion in all cases which are not provided for either by this general agreement or by the committees acting under its authority and sanction. The General Commissioner shall also take charge of Reports and Claims, and appoint such clerks and Claim Agents as may be necessary, and charge up the expenses to the roads interested in the business on an equitable basis, managing the business for the benefit and at the cost of the companies interested.

The following clause is added: —

[11. He shall also have authority to reduce the rates when necessary to meet the competition of Lines or Roads not parties to this agreement, but he shall at the same time make corresponding reductions from other points from which relative rates are made. He shall have such authority over the General Freight Agents and their subordinates and over the accounting departments of the parties hereto as may be necessary to enforce the terms of this contract relative to the maintenance of rates, and to require information relating to the traffic to be furnished to him in such form or manner as he may deem necessary. He shall have access, either in person or by deputy, to the books, papers, correspondence, etc., of any of the officers, agents, or employees of the parties hereto, that relate to the competitive traffic.]

12. The Board of Arbitration shall hear and determine all cases which may be submitted to them under this agreement or by consent of the parties, members of the Association; and the decisions of the said Board of Arbitration shall be final and conclusive.

Unchanged.

13. The Auditor shall have charge of the Clearing House, and shall keep full and accurate accounts of all the joint traffic, making reports of the same to all members of the Association and to the General Commissioner. He shall keep a ledger account with the General Commissioner and with each member of the Association, from which he shall furnish each company a statement of their account monthly, showing the debits and credits to them at each point at which the business is apportioned; and a general balance sheet shall be drawn off monthly, and copies furnished to the Executive Committee and the General Commissioner, who shall cause settlements of balances to be made promptly, distributing the funds deposited to his credit for this purpose, as hereinafter provided, and drawing drafts on debtor companies for balances due in excess of their deposits as shown by the certified statements of the Auditor, which drafts shall be duly honored, notwithstanding errors or omissions, if there be any, which must be adjusted in subsequent settlements.

[13. The Commissioner shall keep full and accurate accounts of all traffic originating at, destined to, or passing through competitive points in which two or more parties to this agreement are interested, making reports of the same to all members of the Association.]

14. In event of a vacancy occurring in the office of General Commissioner, Secretary, or Auditor, the President shall fill the vacancy until a general meeting of the Association can be convened to elect a successor; and such meeting shall be called by the President within twenty days after the vacancy occurs.

Unchanged.

15. All disbursements of the funds of the Association shall be made by the General Commissioner, who shall give bond,

with security in such amount as shall be satisfactory to the Executive Committee, that he will duly and properly account for all moneys of the Association, or belonging to members thereof, which may in any manner come into his possession or under his control. No payments shall be made except on vouchers which have been examined, found correct, and certified by the Auditor. Credit shall be given the General Commissioner by the Auditor, on payments made by him on account of the expenses of the Association or its officers, only on properly receipted vouchers; and such receipted vouchers shall be filed in the Auditor's office, subject to inspection by the Executive Committee, or such person or persons as may be appointed by them for this purpose.

Unchanged.

16. When all parties interested in the joint traffic (including that between points on and beyond the Ohio and Mississippi Rivers and all points South and East) at any point, are willing to maintain rates without an apportionment of the business, no apportionment shall be required. But, if any one of the initial roads insist on an apportionment, the question shall be referred to the Board of Arbitration, to determine whether or not such apportionment shall be made, provided that nothing herein contained shall be construed to require an apportionment of traffic between Nashville and Chattanooga and points South, or of Atlanta business going West. This shall not affect the present agreement as to pooling cotton out of Atlanta.

Omitted.

17. On all business apportioned on the basis of revenue there shall be deducted, as an initial charge, and deposited to the credit of the General Commissioner, by the company which receives the freight, an amount equivalent to twenty per cent. (20%) of the revenue to be divided, such deposit to be made in such bank or banks as the General Commissioner shall designate, subject to his order. The amount so deposited shall be credited by the Auditor to the Companies or Lines by whom they are contributed, and shall constitute a

fund which shall be applied, at the expiration of the month during which the same has been deposited, to the payment of any balances due by such companies; but, after the settlement of such balances, if there be any remainder, it shall be returned to the companies to whom it belongs.

[17. In order to provide for the prompt payment of any fines that may be assessed against any member of this Association for violating its rules, each Company shall deposit with the General Commissioner an amount equivalent to five dollars ($5.00) for each mile of road operated by said Company under the provisions of this agreement, or, in cases where the Company operate a water Line, five dollars ($5.00) for each mile allowed as a pro rating distance in the division of through rates, provided such amount shall not exceed in the aggregate the sum of five thousand dollars ($5,000.00) for any one company; but, in all cases where fines are assessed, the General Commissioner is hereby authorized to draw at sight on the parties against whom such fines are assessed for the full amount of said fines, and each Company party to this agreement hereby binds itself to promptly pay such drafts, it being the intent and purpose of this section that the deposits herein provided for shall not be diminished by reason of the payment of any fines that may be assessed against a company making such deposit.]

18. The Auditor shall be furnished with copies of all manifests issued by the companies members of the Association, for freights which are shipped from or destined to points at which the business is divided by apportionment, such copies to be forwarded at the time the shipments to which they appertain are made; and abstracts of all such manifests shall be furnished to the Auditor at the expiration of each month. The tonnage books of every company in the Association shall be open at all times to the inspection of the Auditor, or such agents as he may from time to time appoint, for the purpose of enabling him to get a complete record of all freights shipped to or from points at which the business is divided by apportionment.

Commissioner's name substituted throughout for Auditor.

19. In apportioning business, cotton, and any other freight which it may be practicable to divide in kind, shall be so divided, and not by allotment of revenue. Each Company or Line shall be required to carry its allotted proportion as nearly as possible; but settlements must be made monthly for any excess carried, as provided for in Section 20, except when otherwise especially agreed between the parties interested, provided that no penalty shall be imposed upon a Company or Line which carries an excess for the benefit of any Company or Line that refuses or wilfully neglects to carry its allotted proportion.

Omitted.

20. All divisions by apportionment of tonnage or revenue shall constitute a special agreement between the Companies or Lines terminating at, or passing through, the point at which the apportionment is made; and terms of such agreements shall be adjusted with reference to the circumstances of each case between the parties, or by arbitration if they cannot agree. The companies to which the allotments are made shall determine the subdivisions thereof, and shall be responsible for the settlement of all balances for excess carried by them. Companies or Lines which carry an excess shall be allowed twenty per cent. of the revenue for transporting the same. The actual cost of compressing is not to be considered as revenue.

Omitted. The following article was here inserted: —

[20. Copies of all rates that may be from time to time agreed upon or fixed in the manner provided shall be furnished promptly to the auditors of the parties to this contract, and they shall see that the rates received are in conformity therewith, and that no variations are made from such rates on manifests, by voucher or otherwise, except by authority of the Commissioner.]

21. When, by reason of any actual difference in the rate or premium for insurance against marine risks, any water Line is at a disadvantage in competing with any other water or combined rail and water Line, such inequality may be ob-

viated by an arrangement with the Insurance Companies, individually or collectively, by which the Transportation Lines can assume or pay the difference between the premium or rate of insurance by their own Line and that by the Lines of their competitors, and thus secure to shippers the same premium or rate of insurance by all Lines. In cases of competition between all rail Lines and water or combined rail and water Lines, the latter may assume the whole of the premiums or rates for insurance against marine risks; and bills of lading to this effect may be issued. It is, however, distinctly understood and agreed that no reduction of the established tariff rates, rebates, or considerations of any kind shall be given or offered to influence shippers, or to secure their preference for any Road or Line.

Unchanged.

22. The Executive Committee shall organize such a system for the rendition of tonnage and revenue reports of the joint traffic throughout the territory covered by the Association as shall enable the General Commissioner to be at all times fully informed of the movements thereof, and the observance of rates established therefor, in order that he may detect promptly any violation of rates, and keep the several Companies or Lines informed as to whether they are in excess or deficit, at such frequent intervals as may be necessary to effect a distribution of the business in accordance with the agreed divisions thereof, and thus prevent the accumulation of the business in excess of the deposits made to secure the same. For these purposes, committees may be appointed, or joint agencies may be established by the Executive Committee at their discretion: provided that such committees shall represent, impartially, all parties interested, and that all nominations of agents shall be made by the General Commissioner; and provided further that the necessary expense of all such committees and agencies shall be borne by the Association and distributed among its members as hereinafter set forth. Tonnage and revenue statements shall be rendered monthly to each member of the Association, and also annually to the 31st of May in a report to be made by the General

Commissioner and Auditor at the expiration of each year, and distributed to the members at least two weeks before the annual meeting.

[22. The Executive Committee shall organize such a system for the rendition of tonnage and revenue reports of the joint traffic throughout the territory covered by the Association as shall enable the Commissioner to be at all times fully informed of the movements therefor and the observance of rates established therefor, in order that he may detect promptly any violation of rates, and keep each Company or Line informed as to the action of the other Companies or Lines. For these purposes, the Executive Committee at their discretion may appoint agents to examine the books of the members of the Association and Inspectors of Weights and Classifications. The expense of such agents and inspectors shall be distributed among the members, as hereinafter set forth. Tonnage and revenue statements shall be rendered monthly], the rest unchanged.

23. Members of this Association shall not enter into any agreement relative to the joint traffic covered by this contract with Transportation Companies not members of this Association, except with the approval of the Executive Committee or the General Commissioner, and in accordance with the rules and regulations of the Association as hereinafter set forth, and as supplemented by the Executive Committee as hereinafter authorized or allowed.

[23. All measures necessary to carry out the purpose of this agreement shall be taken jointly by the parties hereto or jointly by such of the parties as may be directly interested; and should any question arise upon which they cannot agree in relation to the terms of this contract, or any matter arising hereunder, it shall be decided by arbitration, as hereinafter provided, it being one of the fundamental principles of this contract that no party shall take separate action in any matter affecting the interests of one or more of the parties contrary to the spirit and interest of this contract, and that all differences relating to the establishment, adjustment, and maintenance of rates upon the traffic covered by this contract shall be adjusted by arbitration.]

24. Members of this Association are forbidden to reduce the rates made by the Rate Committee, on the plea that they are violated by others, or because of any violation of agreements, or because of any action of any outside Lines. All such cases of violation shall be reported to the General Commissioner, whose duty it shall be to check such violations, if possible; and, in case he cannot do so, he shall call the Executive Committee together, who shall use their influence to have such offending members conform to the agreement and rules.

Whenever the General Commissioner shall have reason to believe that the rates established by the Rate Committee are not being fully maintained by any Line or Lines, or any Transportation Companies members of this Association, it shall be his duty to make a full investigation of the facts in such case, and, if in his judgment there has been any violation of this agreement on the part of said member or members of the Association, he shall submit the evidence in such cases to the Board of Arbitration; and if the Board of Arbitration shall find, after a full hearing of the case, that such members are guilty of violating this agreement as charged by the General Commissioner, it shall impose such penalties therefor as it may deem proper and necessary to secure the maintenance of rates of this Association, and the General Commissioner shall enforce such penalties.

The Board of Arbitration shall make such rules of procedure for the trial of such cases as it may deem proper.

[24. Whenever the rates have been fixed by the Rate Committee, the Commissioner, or the Executive Committee, or by arbitration, as set forth in Section 7, there shall be no reduction from such rates without the consent of the Commissioner. No member of the Association shall reduce such rates, directly or indirectly, by any special rate, rebate, or drawback, or payment of commissions, or by reductions on manifests, or by combinations of local rates, or by rebilling, or by underbilling rates, or by any consideration in the way of free transportation, or in any manner or by any device whatsoever. It is distinctly understood and agreed that the maintenance of rates, as established under the rules of the Association, is of the very essence of this agreement. All cases of

violation shall be reported to the Commissioner, whose duty it shall be to check such violation, if possible, and, in case he cannot do so, to call the Executive Committee together, who shall use their influence to have any offending member or members conform to the agreement and rules.]

The second and third clauses of Article 24 were unchanged.

25. Divisions of all allotments of business shall be to the end of the fiscal Association year, and thereafter till a new allotment is made.

[25. Upon application of any Transportation Company or Line,— member of the Association,— the Commissioner shall have authority from time to time to allow such Transportation Company or Line to charge such differentials * in the rates made by the Rate Committee, by the Executive Committee, or by arbitration, as he may consider just and reasonable. Such differentials shall be withdrawn in the discretion of the Commissioner, or by order of the Executive Committee, or by arbitration.]

26. In order to defray the expenses of the Association, there shall be assessed annually, on each member thereof, a tax of three hundred dollars ($300.00), which shall be applied to paying salaries of General Officers, and towards other general expenses, such as office rent, printing, etc.; and such additional amount may be assessed on the members, pro rata, according to their gross revenue derived from their joint traffic, as may be necessary to meet these and all other expenses of the Association.

Unchanged.

27. The Executive Committee shall have authority to make, from time to time, such rules and regulations, not inconsistent with this agreement, as may be necessary to secure a systematic conduct of the affairs of the Association and attain the objects for which it is formed.

Unchanged.

28. That a line from Buffalo, through Pittsburg, Wheeling,

* "Differential" here means the differences in rates charged by two roads between the same points.

and Parkersburg to Huntington, be made the dividing line between the Eastern and Western Lines for territory hereafter outlined. That the Western Lines will not take business from points east of that line for any points east of a line drawn from Chattanooga through Birmingham, Selma, and Montgomery to Pensacola.

The Eastern Lines, including the Richmond & Danville Railroad via Strasburg, or points east of Strasburg, and the East Tennessee, Virginia & Georgia Railroad via Bristol, not to take business from points west of that line (Buffalo, etc.) to any points on or west of a line drawn from Chattanooga through Athens, Augusta, and Macon to Live Oak.

The business from Buffalo, Pittsburg, Wheeling, Parkersburg, and Huntington, and points on that line, to and east of Chattanooga, Calera, and Selma, to be worked at agreed rates, and the business of those points to be pooled,—50% to Eastern Lines and 50% to Western Lines.

In case the Eastern Lines take Western business, or the Western Lines Eastern business, they to pay into the pool the entire revenue accruing thereon from points of junction with Association roads, to be given to the Lines composing the Eastern or Western Lines, as the case may be.

Unchanged.

29. This contract takes effect the first day of August, 1886, and shall terminate on the thirty-first day of July, 1887. And the fiscal year of the Association shall terminate on the thirty-first day of May, 1887.

1886 changed to 1887, and 1887 to 1888.

Adopted by the Central Railroad & Banking Company of Georgia; Savannah, Griffin & North Alabama; Mobile & Girard; Atlanta & West Point; Western Railroad of Alabama; Port Royal & Augusta; South Carolina Railroad Company; Georgia Railroad Company; East Tennessee, Virginia & Georgia; Norfolk & Western; Richmond & Danville; Charlotte, Columbia & Augusta; Columbia & Greenville; Louisville & Nashville; Mobile & Montgomery; South & North Alabama Railroad Company; Cincinnati, New Or-

leans & Texas Pacific; Alabama Great Southern Railroad Company; Western & Atlantic; Rome Railroad Company; Wilmington, Columbia & Augusta; Wilmington & Weldon; Seaboard & Roanoke; Georgia Pacific Railroad Company; Nashville, Chattanooga & St. Louis; Old Dominion Steamship Company; Merchants' & Miners' Transportation Company; Clyde Steamship Lines; Baltimore, Chesapeake & Richmond Steamboat Company; Ocean Steamship Company; Boston & Savannah Steamship Company.

STATISTICS OF THE GERMAN LABORERS' COLONIES.

TABLE I.

REPORTS FROM ALL COLONIES FOR 1889.

(Compiled from the Monthly Reports in Volume VI. of *Die Arbeiterkolonie.*)

CAPACITY OF THE COLONIES, AND CLASSIFICATION OF THE COLONISTS.

NAME OF COLONY.	DATE OF OPENING.	Inmates at close of year.	Available places.	ADMITTED.		CLASSIFICATION OF THOSE ADMITTED.														
						AGE.						MARITAL STATE.					RELIGION.		
				Since opening.	During 1889.	Under 20.	20–30.	30–40.	40–50.	50–60.	Over 60.	Single.	Married.	Divorced.	Widowers.	Parted.	Protestant.	Catholic.	Hebrew.
1. Wilhelmsdorf, Westfalen.	Mar. 22, 1882.	167	200	5,125	383	25	86	123	95	43	11	290	23	14	51	5	231	102	.....
2. Kistorf, Hannover.	June 24, 1883.	172	150	2,667	385	19	51	115	118	63	19	270	60	.....	38	17	330	54	1
3. Rickling, Schleswig-Holstein.	Oct. 10, "	150	150	3,154	372	7	77	145	93	45	5	294	5	35	25	13	332	40	.....
4. Friedrichswille, Brandenburg.	Nov. 13, "	202	175	3,539	459	20	91	136	116	63	33	306	83	1	47	23	404	54	1
5. Dornahof, Würtemberg.	Nov. 15, "	97	100	2,336	378	29	94	67	106	55	27	335	12	1	20	10	221	157	.....
6. Seyda, Provinz Sachsen.	Dec. 14, "	174	200	2,928	319	15	51	92	84	58	20	199	55	.....	44	21	282	37	.....
7. Dauelsberg, Oldenburg.	Feb. 8, 1884.	42	50	1,119	161	6	36	51	40	20	8	119	23	.....	17	2	139	22	.....
8. Wunscha, Schlesien.	July 14, "	93	100	1,626	257	8	52	80	80	25	12	195	4	29	25	4	159	98	.....
9. Meierei, Pommern.	July 25, "	146	150	1,899	268	6	39	95	83	38	6	198	39	.....	28	3	248	20	.....
10. Carlshof, Ostpreussen.	Oct. 15, "	373	250	2,941	678	13	205	256	139	61	4	555	31	30	52	10	559	119	.....
11. Berlin.	Dec. 1, "	98	100	1,539	400	43	89	134	102	30	2	289	9	52	37	13	336	71	3
12. Ankenbuck, Baden.	Feb. 26, 1885.	65	60	933	177	21	53	40	35	23	5	157	4	2	13	1	64	113	.....
13. Neu-Ulrichstein, Hessen.	Jan. 1, "	118	120	1,349	245	21	63	66	63	22	10	212	4	8	18	3	157	88	.....
14. Lühlerheim, Rheinprov., ev.	Feb. 15, 1886.	120	120	1,356	320	10	80	108	84	32	6	255	21	3	40	1	256	64	.....
15. Schneckengrün, Kgr. Sachsen.	Feb. 22, "	120	120	1,518	345	31	81	100	80	39	14	247	60	.....	30	8	325	20	.....
16 Elkenroth, Rheinprov., cath.	Oct. 20, "	58	50	550	147	7	20	61	36	19	.....	126	7	5	9	.....	1	146	.....
17. Simonshof, Bayern.	May 1, 1888.	108	100	633	374	44	103	87	86	45	9	346	7	1	18	2	204	169	1
18 Maria-Veen, Westfalen, cath.	Oct. 1, "	129	125	482	380	9	80	114	126	44	7	322	14	6	38	1	.....	380	.....
19. Alt-Latzig, Posen.	Oct. 26, "	70	45	216	171	4	44	57	46	14	6	122	9	17	19	4	113	57	1
20. Magdeburg, Prov. Sachsen.	Nov. 23, "	32	32	223	188	36	57	45	42	7	1	149	14	2	16	7	171	15	2
21. Geilsdorf, Thüringen.	July 28, 1889.	81	80	138	149	9	25	54	46	14	.....	116	9	10	9	5	130	19	.....
	Total, . .	2,515	2,477	36,171	6,556	383	1,481	2,027	1,700	762	205	5,102	493	216	594	153	4,702	1,845	9

TABLE I.—*Continued.*

DEPARTURES.

NAME OF COLONY.	Since the beginning.	During 1889.	CLASSIFICATION OF THOSE LEAVING THE COLONIES.									
			Work found by the Manager.	Work found by the Men.	On Account of Expiration of Four Months.	On Account of Bad Behavior.	Returned to Family.	At desire of Colonist.	On Account of Inability to Work.	On Account of Requisition of Police.	Ran Away.	Died.
1. Wilhelmsdorf, Westfalen.	4,958	357	74	.....	.....	4	.....	267	.....	3	9	.....
2. Kästorf, Hannover.	2,495	380	70	.....	.....	27	4	266	8	1	5	.....
3. Rickling, Schleswig-Holstein.	3,004	372	98	22	.....	15	31	183	2	4	17	.....
4. Friedrichswille, Brandenburg.	3,337	438	58	18	57	9	7	270	8	5	5	1
5. Dornahof, Würtemberg.	2,239	382	27	41	.....	19	.....	285	.....	1	8	1
6. Seyda, Provinz Sachsen.	2,754	330	25	31	160	19	9	65	8	1	9	3
7. Dauelsberg, Oldenburg.	1,077	164	28	11	.....	9	.....	96	5	2	12	1
8. Wunscha, Schlesien.	1,533	275	79	12	3	20	33	101	20	1	6	.....
9. Meierei, Pommern.	1,753	264	40	6	2	16	3	185	6	3	2	1
10. Carlshof, Ostpreussen.	2,568	624	90	11	.....	24	.....	483	.....	8	4	4
11. Berlin.	1,441	364	28	61	2	41	1	119	4	6	65	.....
12. Ankenbuck, Baden.	868	175	20	20	.....	17	6	94	2	5	11	.....
13. Neu-Ulrichstein, Hessen.	1,231	242	43	7	.....	6	9	160	1	2	14	.....
14. Lühlerheim, Rheinprov., ev.	1,236	322	58	47	.....	9	4	180	2	8	12	2
15. Schneckengrün, Kgr. Sachsen.	1,398	342	25	1	.....	29	.....	264	9	.....	14	.....
16. Elkenroth, Rheinprov., cath.	492	143	11	19	.....	6	1	85	14	3	2	2
17. Simonshof, Bayern.	525	361	25	14	.....	35	.....	258	23	4	2	.....
18. Maria-Veen, Westfalen, cath.	353	327	17	18	.....	11	.....	265	5	1	10	.....
19. Alt-Latzig, Posen.	146	140	11	6	2	15	2	88	6	3	5	2
20. Magdeburg, Prov. Sachsen.	191	175	61	20	4	8	8	53	13	4	4	.....
21. Geilsdorf, Thüringen.	57	58	2	9	.....	1	1	45	.....	.....	.....	.....
Total,	33,656	6,235	891	374	230	340	119	3,812	172	65	216	17

TABLE II.

LENGTH OF STAY, AND BALANCE OF EARNINGS DUE AT DEPARTURE, OF ALL EX-COLONISTS AT WILHELMSDORF, CARLSHOF, RICKLING, AND SCHNECKENGRÜN.

From Berthold, *Weiterentwickelung der deutschen Arbeiterkolonien*, p. XII.

EARNINGS DUE AT DEPARTURE.	LENGTH OF STAY IN DAYS.											Total.	Per Cent.
	To 14	15 to 28	29 to 49	50 to 63	64 to 77	78 to 91	92 to 105	106 to 126	127 to 147	148 to 175	176 and more.		
In debt	22	47	68	28	18	13	12	5	6	5	8	232	12.4
Received nothing	128	97	89	34	30	10	17	18	9	6	13	451	24.0
To ½ marks	.....	17	45	6	8	2	6	13	1	.....	1	99	5.3
½ to 1 marks	1	6	30	14	10	9	12	4	6	.....	4	96	5.1
1 to 2 "	1	4	39	36	26	16	17	13	14	8	5	179	9.6
2 to 4 "	.....	2	29	36	40	46	44	47	31	15	21	311	16.6
4 to 6 "	.....	.....	3	15	1	27	26	36	31	17	32	188	10.0
6 to 10 "	.....	.....	1	7	11	23	22	35	30	23	39	191	10.2
10 to 15 "	.....	1	.....	.....	2	7	6	12	11	11	17	67	3.5
15 to 25 "	.....	.....	.....	.....	.....	1	1	5	3	8	16	34	1.8
25 to 50 "	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	15	16	0.9
50 and more marks	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	12	12	0.6
Total,	152	174	304	176	146	154	163	188	142	94	183	1,876	100.
Per Cent.	8.1	9.3	16.2	9.4	7.7	8.3	8.7	10.0	7.6	5.0	9.7	100	

TABLE III.

LENGTH OF STAY AND CAUSE OF DEPARTURE OF ALL MEN LEAVING SIXTEEN COLONIES IN 1886-87.

From Berthold, *Weiterentwickelung der deutschen Arbeiterkolonien*, p. VIII.

Cause of Departure.	Length of Stay in Days.														Total.	Per Cent.
	7 or less.	8 to 14	15 to 21	22 to 35	36 to 49	50 to 63	64 to 77	78 to 105	106 to 147	148 to 203	204 to 259	260 to 315	316 to 364	365 and more		
Work found . . .	49	64	86	138	161	151	119	216	233	132	52	31	11	27	1,470	24.7
Desire of Colonist .	142	111	145	269	385	381	317	612	610	296	86	34	15	24	3,427	57.8
Drunkenness . . .	2	2	3	4	11	6	9	3	4	2	.....	1	.....	.....	47	0.8
Laziness	33	18	16	8	7	3	1	1	4	.....	.....	.....	.....	.....	91	1.5
Inability to Work . .	15	10	.....	.....	2	2	.....	1	1	1	.....	.....	.....	.....	32	0.5
Bad Behavior . . .	30	17	24	41	22	23	22	26	21	6	5	3	.....	.....	240	4.1
Ran away	33	16	10	20	13	11	6	5	5	1	.....	1	.....	.....	121	2.0
Requisition of Police	4	5	12	10	8	4	4	3	5	2	.....	1	.....	.....	63	1.1
Sickness (Death) . .	20	17	11	20	11	6	5	10	14	10	10	2	3	.....	139	2.4
Expiration of Time .	.....	.....	.....	.....	.....	.....	.....	6	214	70	5	5	1	1	302	5.1
Other Reasons . . .	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	0.0
Total	330	260	307	510	620	587	483	888	1111	520	158	78	30	52	5,934	100.0
Per Cent. . . .	5.5	4.4	5.2	8.6	10.5	9.9	8.2	14.9	18.7	8.7	2.7	1.3	0.5	0.9	100.0	.....

TABLE IV.

PERSONS CONVICTED OF CRIMES OR MISDEMEANORS IN FOURTEEN COLONIES, 1886-87.

Each individual counted but once.

From Berthold, *Weiterentwickelung der deutschen Arbeiterkolonien*, p. XI.

Times admitted to Colonies.	Never in a Correctional Institution.	Have been confined in								Total from Correctional Institutions.	Per Cent.	Total.
		Jail. (*Haft.*)	Prison. (*Gefängniss.*)	House of Correction. (*Zuchthaus.*)	Jail and Prison.	Jail and H. of C.	Prison and H. of C.	Jail, Prison, and H. of C.	Other Combinations.			
One	926	1,122	559	29	500	19	66	87	309	2,691	62.4	3,617
Two	236	360	208	6	247	5	26	33	115	1,000	23.2	1,236
Three	68	144	64	.....	110	4	9	9	48	388	9.0	456
Four	11	59	20	.....	37	1	1	4	19	141	3.3	152
Five	3	19	1	.....	37	.....	.....	1	8	66	1.5	69
Six or more	3	8	1	.....	5	.....	.....	3	6	23	0.6	26
Totals	1,247	1,712	853	35	936	29	102	137	505	4,309	100.0	5,556
Per Cent. . . .	22.4	30.8	15.4	0.6	16.9	0.5	1.8	2.5	9.1	77.6	.....	100